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FIND PACIFIC COAST MILLS PROSPERING

Assistant Secretary G. A. Ware and Engineer G. D. Bearce of the Newsprint Service Bureau Return from a Five Weeks' Study of Mill Development, Equipment and Cost Accounting as Exemplified by Some of the Big Coast Mills — Much Interested in Logging Operations at Astoria, Oregon — Mr. Bearce Stops at Missoula, Montana, to Study Pulp Possibilities of That Section

G. D. Bearce, engineer, and G. A. Ware, assistant secretary, of the Newsprint Service Bureau, returned last Friday from a most interesting trip to the Pacific Coast where they visited many of the news print interests. The mills are now making their efficiency and cost reports and the trip was for the purpose of giving Mr. Bearce and Mr. Ware an opportunity to help them check up. Mr. Bearce gave his attention primarily to the new mill development, the equipment and other matters of a purely technical nature while Mr. Ware confined his attention for the most part to the methods of cost accounting, etc., followed by the different mills. Both found plenty to interest them and have returned home enthusiastic over what they have seen.

Leaving New York the first week in August they began their work at San Francisco. There they visited the main office of the Crown Willamette Paper Company and also had a pleasant visit with the officials of the National Paper Products Company. After visiting the Crown Willamette Mills, the travellers proceeded to Portland, Ore., where they visited the news print interests of that section.

Logging Operation at Astoria

A visit was also paid to Astoria, Oregon, which is near the point where the Columbia River empties into the Pacific ocean. There they were much interested in the logging operations. These are consummated in true western style with the aid of much machinery, donkey engines, etc. The logs are hauled twelve miles by rail and then floated up the river to the mills.

There both Mr. Bearce and Mr. Ware found much to surprise them, not the least being the life led by the men in camp. The loggers insist on the best of food and they get it. The news print men dropped in on them unexpectedly on a Sunday night and no special arrangements were made for their reception. They found a most complete menu, however, with four or five kinds of meat, a wide assortment of vegetables, several kinds of pies, etc. In the living quarters the comfort of the men was given equal attention. Everything was spotlessly clean, a change of bed linen being a daily part of the program.

Port Angeles, Wash., was next visited where considerable time was spent at the plant of the Washington Pulp and Paper Corporation. Thence the travellers went to Vancouver by way of Victoria and by boat from that point to Ocean Falls, British Columbia. This is reported to be the wettest mill town in existence with an average annual rainfall of 186 inches. Nature evidently wished to impress the truth of that statement on the visitors for their stay here was attended by a violent downpour of rain which amounted to four inches. Here the Pacific Mills, Ltd., were gone over.

By way of the Powell River they then returned to Vancouver where they stopped at the general office of the Pacific Mills. The next stop was at Seattle from which city they proceeded to Spokane, visiting the mills of the Inland Empire Paper Company there.

Mr. Bearce and Mr. Ware here parted company for the time being. The former stopped at Missoula, Montana, to study the pulp possibilities of that section regarding which so much has been said. Mr. Ware continued to Minneapolis and St. Paul. While at Missoula Mr. Bearce had a long interview with the district forester and learned much that was of great interest to him.

The travellers figure that they traversed about 8,000 miles on their trip. Mr. Bearce, in speaking of his trip, expressed pleasure at all he saw and was deeply impressed by the conditions which he found at the various mills, at the modern nature of their more recent expansion and at the general thrift of the companies. While business, he says, is not booming it is by no means slow and there is the general air of prosperity everywhere. He heard little political talk and is of the opinion that the section of the country visited by him is not so greatly exercised and disturbed over the political situation as we are here in the east.

Well Up on Cost Accounting

Mr. Ware endorsed all that Mr. Bearce had to say and in addition referred to the phase of their trip which interested him the most. He found the mills, he visited well up on cost accounting and speaks in the highest terms of the systems they have installed and the thorough application they are making of them.

Digester Explodes at N. Y. & Penn. Plant

LOCKHAVEN, Pa., September 24, 1924.—The explosion of one of the sulphite digesters at the plant of the New York and Pennsylvania Company here at 6:30 Monday night killed three employees, seriously injured two others and caused extensive property damage.

The amount of damage is not known but the digester and ground screen room were completely wrecked. The property was fully covered by insurance. The plant of the Castanea Paper Company which adjoins the wrecked plant was not damaged.

As soon as news of the accident was communicated to the company's New York office, Second Vice President Eustis Paine hurried here where he remained until this morning. Mr. Paine told a representative of The PAPER TRADE JOURNAL that it would be some days before the company could formulate its plans for replacing the damage as the ground is still covered with the debris. He said, however, that immediate steps would be taken to provide for the interests of the company's customers. "This calamity would be nothing if it was not for the loss of life. That we feel keenly."

ANNUAL MILL AND MERCHANT CONFERENCE HELD AT HOLYOKE

Interesting Two Days' Session Held by Associate Mills Which Consist of Crocker McElwain Co. and Chemical Paper Manufacturing Co.—Program Included Some Addresses Abounding in Helpful Suggestions Which Were Followed by Animated Discussions—Fine Social Time Was Enjoyed at Evening Banquet When Rev. James Gordon Gilkey of Springfield Was the Orator.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., September 22, 1924.—The second annual mill and merchant conference opened here today at the Hotel Nontotuck. This annual event is conducted by the associate mills, the members of which are the Crocker McElwain Company and the Chemical Paper Manufacturing Company. These annual meetings are held for the purpose of bringing the merchants or distributors in closer harmony with the manufacturer, and have proven to be a very successful venture.

Welcomed by C. A. Crocker

The program opened with a brief address of welcome by C. A. Crocker, the president of the Crocker McElwain Company. S. S. Rogers, the vice-president gave a fifteen minute talk on "The Keynote" which was very interesting, and which was received with enthusiasm by those present.

"Time is Short" was the theme which Brad Stephens of Boston chose for his talk. It proved highly instructive.

George W. Hopkins, vice-president of Charles W. Hoyt Company, Inc., of New York, had an interesting subject, "Profit in Selling Advertised Papers—How to Get It." This was later taken up at a round table discussion after lunch. It was one of the outstanding features of the morning program.

The program for the morning was closed at noon and a delightful buffet luncheon was served.

Monday Afternoon Session

Prior to the afternoon session C. H. Barr, manager of Sales Promotion for the Crocker McElwain Company spoke on "Closer Covenants between Merchant and Mill." This closed the general conference and at 2.45 the Department Meetings commenced, the first of which was the Bantam Manifold and Index Bristol Meeting. At this time the advertising plans for 1925 were discussed.

An open discussion on what the merchant may reasonably expect of his salesman brought out some clever ideas and was a very popular part of the session. Agency relations was also a question for open discussion.

The Certificate Bond Meeting was largely attended and the report of K. S. Warner, chairman of the Certificate Bond Advisory Association was listened to with interest.

Everybody took part in an open discussion on Increased Sales Possibilities on Certificate Bond. Many good ideas were submitted and discussed.

K. S. Warner Re-elected Chairman

At the close of this session K. S. Warner was re-elected chairman of the committee and H. W. Mathewson was re-elected as a member. The vote was unanimous.

At 7 o'clock a complimentary dinner was tendered the visitors by C. A. Crocker and R. F. McElwain. There were 193 guests present. Seated at the table with Messrs. Crocker and McElwain, as invited guests, were: Mrs. C. A. Crocker, Miss Crocker, Miss Paulina McElwain, Miss Harriet McElwain, Mrs. Gilkey and Rev. J. G. Gilkey.

Competitors Present

An unusual feature, and one that caused considerable favorable comment, was the presence of executives of many of the large paper mills in this vicinity, who are competitors of Crocker McElwain Company.

Following the dinner, the toastmaster, C. A. Crocker, introduced the speaker of the evening, Rev. James Gordon Gilkey, pastor of the South Congregational Church at Springfield, Mass.

He used for his topic, "The New Generation in American Life," and for more than an hour held the uninterrupted attention of his audience.

Given Hearty Vote of Thanks

At the sugestion of K. S. Warner of New York a rising vote of thanks was given Mr. Crocker and Mr. McElwain for all that has been done for the merchants during the past year and at this conference.

Tuesday morning was given over to a general program of interesting meetings which were all well attended.

At noon a luncheon was served at the Mt. Tom Golf Club, followed by a Golf Tournament. For those who did not play golf an interesting program of sports were held at the Holyoke Canoe Club.

Among Those Present

Among those who attended were the following:

G. D. Allen, Knight Allen & Clark, Inc., Boston, Mass.
R. L. Allison, U. S. Envelope Company, Springfield.
H. F. Anderson, Donaldson Paper Company, and Mrs. H. F. Anderson, Harrisburg.
C. H. Baldwin, Conrow Brothers, and Mrs. C. H. Baldwin, New York.
S. T. Baron, Royal Card and Paper Company, New York.
Leon Beck, Charles Beck Company, Philadelphia.
H. W. Borchardt, Pilcher-Hamilton Company, Chicago.
R. D. Boyle, Standard Card and Paper Company, New York.
W. C. Bryan, R. M. Myers & Co., and Miss Bryan, Buffalo, N. Y.
E. S. Burns, John S. Cheever Company, Boston, Mass.
A. J. Campbell, Arnold-Roberts Company, Boston, Mass.
C. H. Charnella, Paper House of New England, Springfield.
D. P. Cole, Eastern Paper and Supply Company, Springfield.
W. B. Connors, Clement & Stockwell, Inc., New York.
G. C. Custer, W. F. Nackie Paper Company, Milwaukee, Wis.
Francis A. Day, U. S. Envelope Company, Springfield.
Allen C. Damon, Paul E. Vernon & Co., New York.
H. Donahue, Molten Paper Company, and Mrs. H. Donahue, Philadelphia.
J. A. Donaldson, Donaldson Paper Company, and Mrs. J. A. Donaldson, Harrisburg.
J. J. Dorsey, F. A. Flinn, Inc., New York.
Henry Emery, U. S. Envelope Company, Springfield.
A. W. Erdman, Rourke-Eno Paper Company, Hartford.
C. A. Esty, Chas. A. Esty Paper Company, Worcester, Mass.
L. R. M. Gardner, R. L. Greene Paper Company, Providence.
Samuel C. Garner, J. E. Linde Paper Company, New York.
T. C. Gregory, R. L. Greene Paper Company, Providence, R. I.
J. L. Goldstein, David L. Engel, and Mrs. J. L. Goldstein, New York.
N. Goldstein, Tri-State Wholesale Paper Company, Shreveport, La.
Max Greenebaum, Beekman Paper and Card Company, New York.
E. A. Hall, Pilcher-Hamilton Company, Chicago.
A. C. Hall, John Carter & Co., Inc., and Mrs. A. C. Hall, Boston, Mass.
F. O. Hanson, Plymouth Paper Company, Holyoke, Mass.
E. H. Horrigan, W. H. Smith Paper Corporation, Albany, N. Y.
C. K. Judd, Judd Paper Company, Holyoke, Mass.
J. H. Joyce, Empire Paper Company, and Mrs. J. H. Joyce, Chicago, Ill.

A. M. Juby, A. W. Pohlman Paper Company, New York.
W. G. Kilner, PAPER TRADE JOURNAL, New York.
Alfred Kinn, J. E. Linde Paper Company, New York.
C. Knight, Knight-Allen & Clark, Inc., Boston, Mass.
Chas. Koch, Barton-Duer & Koch Paper Company, Washington, D. C.
M. Kochman, Manhattan Card and Paper Company, New York.
C. R. Kuenstner, Kuenstner & Lucie Paper Company, New York.
Miss B. Lastfogel, Union Card and Paper Company, New York.
S. Lathrop, Lasher & Lathrop, Inc., and Mrs. S. Lathrop, New York.
B. E. Linde, J. E. Linde Paper Company, New York.
J. W. Lux, J. E. Linde Paper Company, New York.
W. J. McLellan, Carter-Rice & Co., Boston, Mass.
Bryant McQuillen, Storrs & Bement Company, Boston, Mass.
S. S. Dillard, Caskie-Dillard Company, Charlotte, N. C.
Chas. Maiers, White-Burbank Paper Company, New York.
G. A. Matthews, New Haven Paper Company, and Mrs. G. A. Matthews, New Haven, Conn.
C. H. Miles, M. & F. Schlosser, and Mrs. C. H. Miles, New York.
W. N. Meek, Eastern Paper and Supply Company, Springfield.
J. F. Miller, Chope-Stevens Paper Company, and Mrs. J. F. Miller, Detroit, Mich.
B. R. Moore, R. P. Andrews Paper Company, and Mrs. B. R. Moore, York, Pa.
R. E. Moos, Beekman Paper and Card Company, New York.
F. B. Mott, Conrow Brothers, and Mrs. F. B. Mott, New York.
W. L. Muzzy, Proctor Paper Company, Boston, Mass.
Jacob Nacht, Union Card and Paper Company, New York.
C. M. Noll, Van Reed Paper Company, Reading, Pa.
J. W. Parker, Beekman Paper and Card Company, New York.
R. E. Parker, Parker-Thomas & Tucker Paper Company, Chicago.
E. A. Petrequin, Petrequin Paper Company, and Mrs. E. A. Petrequin, Cleveland, Ohio.
A. H. Phillips, Troy Paper Corporation, and Mrs. A. H. Phillips, Troy, N. Y.
L. D. Post, Paper Mill, New York.
E. L. Potter, Potter-Taylor Paper Corporation, Albany, N. Y.
M. Pomerance, Forest Paper Company, New York.
H. C. Price, Potter-Taylor Paper Corporation, Albany, N. Y.
W. H. Rourke, Rourke-Eno Paper Company, Hartford, Conn.
H. W. Rowe, Dobler & Mudge, and Mrs. H. W. Rowe, Baltimore, Md.
J. R. Sherman, Antietam Paper Company, and Mrs. J. R. Sherman, Jacksonville, Fla.
L. Shuman, Manhattan Card and Paper Company, and Mrs. L. Shuman, New York.
Wm. T. Sibley, Alling & Cory Company, Buffalo, N. Y.
C. Simmons, W. H. Smith Paper Corporation, Albany, N. Y.
Jos. D. Snell, Von Olker-Snell Paper Company, Boston, Mass.
L. A. Smith, Field-Hamilton-Smith Paper Company, and Mrs. L. A. Smith, Omaha, Neb.
Wm. Steadman, J. E. Linde Paper Company, New York.
W. B. Stevenson, Storrs & Bement Company, Boston, Mass.
A. C. Thomas, F. A. Flinn, Inc., New York.
F. A. Roll, Garrett-Buchanan Company, Philadelphia.
G. R. Tolen, Midland Paper Company, Chicago.
C. W. Townsend, U. S. Envelope Company, Worcester, Mass.
C. K. Urquhart, Urquhart Paper Company, and Mrs. C. K. Urquhart, New York.
B. VanSchaack, Rourke-Eno Paper Company, Hartford, Conn.
H. E. Waite, John Carter & Co., Inc., and Mrs. H. E. Waite, Boston, Mass.
W. J. McCain, Walden Sons & Mott, New York.
K. S. Warner, John F. Sarle Company, New York.
H. A. Washburn, Messinger Paper Company, Chicago.
R. B. Wigton, Donaldson Paper Company, Harrisburg.
J. S. Furlong, Wilcox-Walter-Furlong Paper Company, Philadelphia.
F. W. Wilson, Blake, Moffitt & Towne, New York.
F. J. Wright, Acme Paper Company, St. Louis, Mo.
G. Wright, Acme Paper Company, St. Louis, Mo.
B. W. Wood, W. H. Smith Paper Corporation, Albany, N. Y.
J. H. Walsh, Cleveland Paper Manufacturing Company, Cleveland, O.
Norman Fort, T. W. Price Company, Philadelphia.

Western Quebec Paper Mills Start

MONTREAL, Que., September 25, 1925.—The Western Quebec Paper Mills Limited, which has been in course of construction for the last year, went into production last week, the first paper being put over the machine on September 17.

The company was organized something over a year ago by a group of well-known Montrealers. The president of the company is R. W. Barclay, vice-president of the Ottawa-Montreal Power Company; Wm. Currie of the Dominion Paper Company, vice-president; C. deWolf Reid, managing director; the other directors being H. M. Banks and J. M. Robertson, the well-known electrical engineer.

The company has been organized to manufacture higher classes of light weight specialties most of which are still being imported. Among the lines that will be manufactured are tissues, manifold papers, onion skin papers and other specialties.

The policy of the company will be to do business through the wholesale distributing houses, and converters of the lines it will make. It is understood that the sale of the entire output of the mill has been arranged for.

The mills are located at St. Andrews East, Que., about two miles from the mouth of the North River, and on the lines of the Canadian National Railways. The head office is in the Keefer Building, Montreal.

It is interesting to note that this mill is situated almost on the exact site of the first paper mill erected and successfully operated in Canada in 1803.

Dr. Baker Speaks at Holyoke

HOLYOKE, Mass., September 23, 1924.—"The future of the paper industry is inextricably involved with the nation's supply of wood for paper making, and this is true not only in the case of the coarse papers, but to a certain extent even to the mills right here in the Holyoke district, the largest center of fine paper manufacture in the world," said Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, before the Holyoke Rotary club this noon.

"To keep the paper industry where it is means the bringing of the forests back to the region of the mills, and Massachusetts, with its 3,000,000 acres of forest land has an opportunity that the state must not overlook in its future industrial development.

"The paper industry is a fundamental national industry. New York and Maine are the leaders in the wood using states, while Massachusetts leads the world in the fine paper field. And even in this fine paper manufacturing center it must not be overlooked that 95 per cent of the paper of the nation is made entirely or in part from wood. The prosperity of the individual groups in the paper industry after all is dependent to a large extent upon the prosperity of the industry as a whole, and so I want to urge you men who think in terms of fine paper not to overlook the problems and the possibilities of the entire industry.

"We in America can be proud that our per capita consumption of paper is the largest of any country in the world for just one reason —that the American people are an educated, not an illiterate nation. The per capita consumption of paper in any nation is a direct index of the education of its public."

TORONTO TRADE REACTION FOLLOWS SPURT IN BUSINESS

Conditions Still Spotty and Jobbers Are Wondering When Trade Will Assume Settled Normal Basis—Considerable Difference of Opinion Regarding the Pulpwood Outlook—Forest Products Laboratories Make Experiments in Recovery of Good Paper Stock From Condemned Paper Currency—One Offender Fined $50 For Not Taking Out Sales Tax License—Notes and Jottings.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ontario, September 22, 1924.—The spurt of last week in the paper business fell off somewhat during the past few days showing that trade is yet spotty. The mills are operating steadily with fair production but the jobbers are still wondering when trade will assume a settled normal basis. Orders for the most part are small and generally wanted in a hurry as outside customers decline to stock up and prefer that the distributors should carry the load. Book paper for the catalogue and publishing trade are in good demand but coating mills are very quiet.

In the rag and paper stock line there is a very good call for all grades of new cotton cuttings and prices are up slightly from last week. A fair supply of stock is being used by board mills, who have found their orders increasing and paper box producers say that business with them has picked up quite a bit during the last few days. Producers of light weight papers report they have little cause to complain when everything is taken into consideration.

News print is in good demand and there is a probability that prices may come down. Two or three manufacturers of late have expressed the opinion that with a lower figure the mills could carry on and still make a very decent profit.

Pulpwood Production Falls Off

In regard to the pulpwood situation the opinion regarding the outlook is not unanimous. Prices for all kinds of wood except poplar are lower than they were at this period last year and few of the mills have definitely entered the market. They appear to be holding back, according to several dealers, to see how matters shape up. All the big plants seem to have large stocks on hand and it would appear as if there will be quite a curtailment in the amount of wood contracted for. It is said that the Great Lakes Paper Co. of Fort William, will be buying about forty thousand cords and this will help out the situation in that district. Another authority asserts that the crop this year will be about thirty-five per cent below last season, added to which recent heavy rains in the east have resulted in large quantities of wood being lost through the breaking of booms. Many settlers are trying to dispose of their wood but contractors are not anxious to buy in view of the uncertain outlook. If the pulp market improves as many predict, there will be a decided change. Some pulp mills, which have been running only five days a week will, it is declared, soon be operating six days and American plants will within the next month or two realize that stocks are low. The future, however, according to the best authorities, is largely speculative.

Recovering Good Paper Stocks

A series of experiments have been carried on by the Forest Products Laboratories to develop the best method of recovering good paper stocks from the condemned paper currency withdrawn from circulation by the Department of Finance and the various banking institutions and to ascertain if such a method is feasible. Refining of the stock produced under normal cooking conditions was carried out and, by the use of a special washing equipment, it was found possible to recover an absolutely clean pulp. The paper used for the printing of Canadian bank notes is made from pure linen cuttings and is one of the most expensive papers manufactured. It will readily be seen that if the Forest Products Laboratories are able successfully to reclaim the paper from condemned currency it will be of considerable importance.

Must Take Out Sales Licenses

Paper firms and others, who are required to take out a sales tax license, are interested in the case of E. S. Thompson, of Mount Brydges, Ont., who failed to comply and was fined fifty dollars or three months in gaol. Thompson admitted receiving mail from the department of customs and excise, Ottawa, but, after opening the same, admitted that he paid little attention to the articles contained therein. In spite of repeated warnings that he would be hailed into court unless he took out a sales tax license, he treated the whole affair lightly. He pleaded guilty to the offense.

Mr. Backus and the Norman Dam

To protest against any arrangement whereby the Dominion Government might grant E. W. Backus of the Fort Frances Pulp and Paper Company and Kewatin Lumber Company the right to reconstruct the Norman Dam and use it for power purposes, a delegation representing the provinces of Ontario and Manitoba, the Ontario Hydro-Electric Power Commission, the City of Winnipeg and the Winnipeg Electric Railway conferred with Hon. Charles Stewart, Minister of the Interior, recently. The Manitoba Government, the City of Winnipeg and the Winnipeg Electric Railway, which have extensive power interests, fear that Mr. Backus will make some arrangements whereby they will be dependent on him and have to pay exorbitant sums for storage water. The low water at the Winnipeg River watershed and the rapid increase in the use of power in that area have made the Lake of the Woods as a storage reservoir one of the most valuable in Canada.

Notes and Jottings of the Industry

George Wilson, of Clark Bros., Limited, Winnipeg, was in Toronto during the past week calling on the trade.

H. D. Cooper of the London, Eng., office of the Hodge-Sherriff Paper Company, Toronto, has been appointed manager of the new branch which the company has opened in Montreal. Mr. Cooper spent the past few days in Toronto.

The head office of the Spanish River Pulp and Paper Mills in the Bank of Hamilton Building, Toronto, is being overhauled and considerable additional space has been added to the Board Room.

M. M. Montague, sales manager of the Standard Paper Mills Company, Richmond, Va., was a caller upon the trade in Toronto during the past week as was also E. P. Griscoll, of the Paper City Manufacturing Company, Holyoke, Mass.

The capacity of the Thunder Bay Pulp and Paper Company's ground wood pulp plant at Port Arthur has been doubled and the output is now one hundred and twenty tons daily. The addition takes up a further block of 1,000 horse power from the Nipigon hydro system.

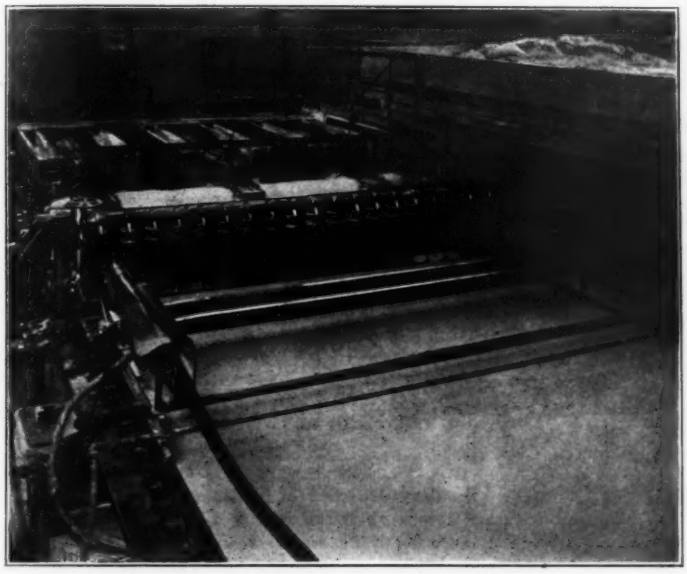
In the semi-final game for the soft ball trophy and the city championship of Toronto, the girls from the plant of the Hinde and Dauch Paper Company of Canada won. They also took the first game of the ladies city play-off.

A charter has been granted to Gray Bros., Limited, of Perth, Ont., to buy, sell and deal in timber berths, pulpwood, etc. The authorized capital is $100,000. Among the incorporators are H. R. Gray, of Perth, and A. H. Gray and John T. Gray, of Clyde Forks, Ont.

J. P. V. Fagan of the Spanish River Pulp and Paper Company, Sault St. Marie, Ont., spent a few days in Toronto recently on business.

Paper Sales, Limited, Toronto, have been appointed Canadian selling agents for Chardell Papers, which are used for gift boxes, novelty boxes, etc., and are manufactured by the Paper City Manufacturing Company, Holyoke, Mass.

FACTS about a New Method of improving the quality of paper are briefly given here. They are facts that are being verified in paper mills all over the United States. A Wisconsin mill writes: "We have cut the variation in caliper of our paper by 75%." Two New York mills inform us that they have greatly improved their formation and practically eliminated caliper variation. Complete information regarding these and others, making many different kinds of paper, is yours on request.



The above illustration pictures an installation of the Voith High Pressure Stock Inlet in a New York Book mill.

How the Voith High Pressure Stock Inlet Makes Better Paper

1. By feeding the stock to the Fourdrinier wire at the breast roll without aprons or slices, it gives the entire surface of the wire for formation purposes.

2. It eliminates all lumps and foam spots, thus not only making better paper but reducing the number of breaks.

3. By minute adjustment, easily and quickly made, the stock is fed so evenly to the wire that a sheet of uniform caliper can be made across the entire width of the machine.

4. These improvements in quality are made at an actual saving in cost. The machine can be speeded up as the stock is fed evenly at any speed desired. There is less wear on the wires and they last longer. It takes less time to make adjustments and there are fewer breaks.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Avenue

THIS COUPON

If sent in to us at once, will bring you an attractive booklet, giving full particulars regarding the above. Send for it today.

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PAPER TRADE IN BOSTON IS MORE ENCOURAGING

Dull Period Has Passed and Orders Are Coming In More Satisfactorily—Numerous Paper Manufacturers Exhibit Special Paper During New England Week—Representative Boston Paper Merchants Make Exhibit at the Graphic Art Gallery of Business Printing Recently Gathered From All Parts of the United States by the Strathmore Paper Co.—General News of New England Trade.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., September 22, 1924.—Many executives are away from their offices attending conferences and conventions and it is interesting to note that without exception, these paper men are going into these conventions with a feeling that business is better. Everywhere the remark is heard that the dull period seems to have passed and orders are coming along better. Prices show no change for the week and mill offerings are not changed. Sales representatives are anxious for orders but have made no sacrifices in quotations to induce same.

Paper Men Observe New England Week

While it is too early to know just what actual results will come from the observation of New England Week which was celebrated here September 15 to 20, it must be said that great interest has been aroused by this plan. Of course the retailers have gained the greatest good from it but there has been an indirect benefit to the manufacturers of New England as they have made new connections and sold new ideas in places where they have never ventured before. Many paper manufacturers cooperated with their jobbers and distributors to make some kind of a display of their products.

Exhibition of Business Printing

Under the combined auspices of The Arnold Roberts Company, Carter Rice & Co., Cook-Vivian Company, and Storrs & Bement Company an exhibition of business printing recently gathered by the Strathmore Paper Company from all parts of the United States was held at the Graphic Arts Gallery, 95 St. James avenue, Boston, during the past week. From the number of visitors it must be assumed that the exhibit was immensely interesting.

R. G. Daniels to Go to Chicago

R. G. Daniels, local manager in charge of the sale and distribution of Dixie Drinking Cups for the Individual Drinking Cup Company of Easton, Pa., will shortly take up his old territory in Chicago. Mr. Frank Hunt who was formerly northern N. E. representative will take charge of the Boston office. The trade extends its congratulations to both these young men in their promotions and trusts they will win new laurels in their new fields. J. V. Cuskey, general sales manager was in Boston the past week and completed the transfer of the office and called on some of the larger trade.

General News of the Trade

The trade will regret to learn of the death of George O. Coombs, salesman for Carter, Rice & Co. in the Providence territory. Mr. Coombs was well liked and had served the Carter Rice Company faithfully for about ten years. His death was rather sudden as he had apparently been in good health.

H. E. Thwaite, formerly representing the Northern Paper Mills in eastern territory will now represent Frank L. Scott & Co. in similar territory.

W. W. Wannamaker, president of the Orange Cotton Mills of Orangeburg, S. C., visited the trade here in this section during the past week. Mr. Wannamaker has not been north for ten or twelve years but came on to attend the Shriners convention at Portland, Me., and took advantage of the opportunity to combine pleasure with business and call upon some of his trade.

G. N. Hanover, representing the Universal Crepe and Tissue Mills, Inc., with mills at Ballston Spa, N. Y., called on the trade the past week. Mr. Hanover travels out of the New York office at 29 West 34th street.

Bertram Kellman, manager of sales for the Paper Utilities Company, Inc., 220 Tenth avenue, New York, was in town this week calling on the trade in the interests of Tulip Paper Cups.

R. H. Chapin from the Millers Falls Paper Company was in Boston this week.

John Carter & Co. have prepared a very handy schedule showing the standard sizes and weights of book papers on one side and on the reverse a table showing the number of sheets of any standard size required to cut a thousand pieces. This table will be appreciated by printers and the general trade because it gives in tabular form many computations which it often takes much time to figure out.

George E. Knowlton, of Knowlton Brothers, Watertown, N. Y., is touring through New England with his family and calling on the trade as he motors along. He states it is a splendid way to combine pleasure with business and he reports wonderful weather and a delightful trip throughout. His mill manufactures the well known line of papers under the "Kamargo" brand.

H. C. Lucas representing Frank L. Scott & Co., selling agents for the Stevens & Thompson Paper Co. Mills is advising his trade that the new office of his firm is now at 270 Madison avenue, where new quarters have been fitted up and are much more convenient for the trade than heretofore. Mr. Lucas specializes on tissues.

According to the latest statistics, New England has over 200 paper mills and 32,000 employees which produce more than $200,000,000 worth of paper annually. This fact was prominently brought out during New England Week celebrated in Boston.

Former Head of Reid Pulp Co. to Appeal

[FROM OUR REGULAR CORRESPONDENT.]

ALBANY, N. Y., September 22, 1924.—Benjamin F. Witbeck, who was president and treasurer of the Robert H. Reid Pulp and Paper Company, through his attorney has filed notice of an appeal from the decision recently handed down in which Dale S. Carpenter, of Cohoes, was given a judgement of $1125 against Mr. Witbeck. Mr. Carpenter held a temporary stock certificate which described an issue of $100,000 in two year gold notes. The certificate was signed by Mr. Witbeck as an officer of the Reid Pulp & Paper Company, now bankrupt. The court some time ago held that the temporary stock certificate was without value as the issuance of the same was never authorized by the company. Basing his action on this verdict Mr. Carpenter brought suit against Mr. Witbeck personally for $1125, the face value of the stock certificate, and was given a judgement for the full amount, the court in its decision holding Mr. Witbeck personally responsible. It is from this judgement that Mr. Witbeck will appeal.

Walmsley & Co. to Build Machines for Price Bros.

MONTREAL, Que., September 23, 1924.—Charles Walmsley & Co. (Canada) Ltd., has received a contract from Price Bros. & Co. for two 234 inch news print machines for their new development at Alma, Que. These machines will be known as No. 9 and No. 10 machines and will be similar to their No. 6 and No. 7 machines which have recently been brought into operation and which are doing splendid work; No. 6 machine having produced as high as 111.8 tons of standard news print trimming 219 inches in twenty-four hours. These machines will be built in their Longueil works near Montreal.

World Records!

April 24, 1924: A 204-inch Bagley & Sewall paper machine, installed in the Algonquin Corporation's Mill, Ogdensburg, N. Y., produced 102.9 tons in 24 hours. This was the first machine to produce 100 tons of newsprint in 24 hours in the history of paper making.

It is equipped with Bird Screens

August 1, 1924: A Walmsley-234 newsprint paper machine, installed in Price Bros. & Co., Limited Mill, Kenogami, P. Q., broke all production records by turning out 111.8 tons of newsprint in 24 hours.

This machine is equipped with Bird Screens

August 9, 1924: A Dominion paper machine, 221-inch trim, installed in the Keewatin Lumber Co., Limited Mill, Kenora, P. O., produced 110.72 tons of newsprint in 24 hours. No breaks occurred during the 24 hours.

Here again Bird Screens are used

All of which goes to prove that Bird Screens are absolutely essential to high speed and profitable production. Our new catalog is ready.

BIRD MACHINERY

BIRD MACHINE COMPANY
SOUTH WALPOLE - MASSACHUSETTS

BIRD SCREENS

MORE ACTIVITY DISPLAYED BY CHICAGO PAPER MARKET

Change for the Better is Most Gratifying in Fine Paper Division While Orders Come in Greatly Increased Numbers for Coarse Papers—James H. Coy Becomes Vice-President of Western Salesmen—Middle States Wrapping Paper Association and Central States Paper Trade Association Hold Instructive Meetings—Salesmen's Association Has Another Golf Tournament.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., September 22, 1924.—Activity quickened in every branch of the paper market in this territory over the past week. Consumer demand strengthened to a marked degree, which, in turn, sent merchants to producers for more adequate stocks to meet it. From the highest grade bonds and books to paper stock and roofing stock the improvement was striking, thus spurring individual firms on to heavier sales volume. And it is coming, if indications are correct.

In the fine paper division, the change for the better is entirely gratifying. Coated paper manufacturers reports merchants taking high grades in carload quantities and specifying prompt shipment. This alone goes to show that large consumers are fast returning to the market with orders that were held off perhaps a trifle too long with the result that quick action is necessary to get them finished up in time. Consumption of fine coated and book papers in this territory increased rapidly in the last few days. This also applies to bonds and writings. Producers have found it a ready market and in the bonds in particular there has always been a generous supply. Some makers even put on new machines to turn a larger volume of paper into the territory.

Orders Coming Thicker for Coarse Papers

Order books of the coarse paper people are fast becoming loaded up. Naturally, it has injected new life into the division, sending salesmen after the already available business with fresh enthusiasm. Industrial buying is stronger with large orders finding their way onto salesmen's books. This is the principal cause for quickened movement of coarse papers. These buyers held off purchasing all the summer months until now they are almost forced to return to the market or be handicapped in serving their own clientele. Small consumers such as the grocery and similar retail trades constitute the steadiest customers. Their requirements do not vary perceptibly, except in rare instances or times. Merchants who have a long list of such customers find it possible to keep moving a fairly large volume.

Boards and Containers Go Higher

Boards and containers are not omitted from the list of those paper products which experienced increases in price and demand as well. All grades are now approximately $2.50 per ton higher than they were a few weeks ago. Demand grows daily and orders continue to pour into the mills. At present they are pretty well sold ahead, some having orders on file for four to six weeks in advance. Plain chip board was not moving very rapidly up until last week, but the box makers are getting busy now and they will cut up a large quantity of chip from now on to be converted into boxes. This will stimulate the market to a considerable extent.

With the better situation prevailing in the board and container market, paper stock continues to stay at its high point. Nearly all grades are from ten to thirty per cent higher than they were six weeks back. They probably will not ascend further and if so it will only be a matter of a few cents per hundred. Roofing stock has remained quite steady over a two-months' period both in price and demand with every prospect of its continuance for some time to come.

James H. Coy Assumes Vice-Presidency Western Salesmen

For some time Ray Russell, who maintains Chicago offices for the Marathon Paper Mills in the Conway Building, has served as vice-president of the western division of the Salesmen's Association of the Paper Industry. However, just recently he took over some additional work for his firm which necessitated his resigning that position. James H. Coy, who represents the Flambeau Paper Company, in this territory, and who is a well-known figure in the industry, has been appointed to fill the balance of Mr. Russell's term. The boys regret having to lose Mr. Russell from their organization but they know his office will be ably handled by his successor.

Salesmen Again Join in Golf Tournament

A second outing was staged on Tuesday, September 16, by the western division of the Salesmen's Association of the Paper Industry at the Oympian Fields Country Club. The western division played host to the members of the association.

Again, R. B. Harbison, Chicago sales agent for the International Paper Company of New York, was chairman of the committee on arrangements and the whole affair went off equally as enjoyable as the first.

Mr. Harbison again won the low gross cup with a score of 79. The low net prize was picked off by J. M. Stevenson, of the Norther Paper Mills. Special prizes were won by Creighton Whiting, of the American Writing Paper Company, James H. Coy, of the Flambeau Paper Company, and R. H. (Bob) Butterworth, Chicago sales manager for the Champion Coated Paper Company. Luncheon was served at noon and dinner in the evening.

Middle States Association Discusses Mill Brands

A meeting of the middle States Wrapping Paper Association was held on Thursday, September 10, at Hotel Cleveland, Cleveland, Ohio. S. L. Swartz, president of the organization presided and in calling the meeting to order he spoke briefly on the value of a trade association. He summed up his remarks by stating that for proof of association work, members should study those industries which are thriving and profitable. They will be found to be closely organized. On the other hand, they will find those industries which are unprofitable and unprogressive to be the ones in which association work is poorly conducted or not attempted at all.

One of the principal topics of discussion at the meeting was the advantages of mill brands of wrapping paper over private brands. A number of the members spoke advocating mill lines and giving their reasons. An equal number spoke in favor of private brands answering many of the arguments presented by the affirmative.

The Hearn Paper Company, of Youngstown, Ohio, was unanimously elected to membership in the association. It was voted that the next meeting of the Middle States Wrapping Paper Association would be held in Indianapolis, Ind. With the Cleveland members as hosts, a delightful dinner was served in the evening, after which members were taken to the theatre.

Central States Hears W. N. Gillette

A meeting of the Central States Paper Trade Association was held on Wednesday, September 9, at Hotel Cleveland, Cleveland, Ohio. The session was called to order by President A. H. Seylar.

The principal feature of the meeting was a comprehensive address by W. N. Gillette, vice-president of the Chicago Paper Company, Chicago, Ill. Mr. Gillette's topic was the elimination of unprofitable stock items, a question of paper merchandising which he has studied for some time. Mr. Gillette disclosed some very startling figures in this connection showing the members that many paper houses are making no money on some lines year in and year out because they don't know these are unprofitable lines.

Upon invitation of the Detroit, Mich., members, that city was selected for the next meeting.

Established 1886

L. O. W.

Having chartered a number of steamers to bring pulp supplies for our customers by Last-Open-Water from abroad for consumption during the coming Winter, we offer the use of these facilities which may save you considerable money.

We have splendid proposals to make on good qualities of Bleached and Unbleached Strong Sulphite, Mitscherlich, and Kraft Pulps; also Wet and Dry Ground Wood.

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MONTREAL STILL DISCUSSING SALE OF RIORDON CO. ASSETS

Report Current That New Operating Company Will Be Formed to Hold Assets Now in Hands of Two Groups—Laurentide Co. Adds Substantially to Its Timber Reserve—St. Lawrence Paper Mills Sees Possibility of Reduction in Price of News Print—Start First Unit of Power Plant of Laurentian Hydro Electric Co.—Little Damage Done by Forest Fires.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., September 22, 1924.—In connection with the sale of the Riordon Company's assets it is stated here that the foormation of a new operating company to hold all the assets now in the hands of the two groups of bondholders is under consideration. At the present time, the properties are in two divisions as regards control. The Kipawa Pulp Mill and the Gatineau limits belong to the eight per cent bondholders of Boston and the Hawkesbury and Merritton Mills are owned by the general mortgage bond holders of the old Riordon Pulp and Paper Company. In addition there is the Riordon Pulp Corporation as the body corporating the company under the lease and financed by the Boston bondholders. The Hawkesbury and Kipawa mills have for the past two years been operated in conjunction with each other and there is disposition to continue this system which is more economical than separate management. The Merritton Mill, however, is in southern Ontario and has to secure its pulpwood by long rail haul. It is possible that this mill will be sold as it is expensive to operate. The Ticonderoga Paper Mill at Ticonderoga, N. Y., which produces paper from bleached pulp will be retained, it is stated, as this has proved a very valuable investment for the Riordon Company. It is understood that for about 60 per cent of the stock of this company, the Riordon Company only paid $1,250,000 and that the earnings are running about 17 per cent on this basis. The Kipawa and Hawkesbury mills in 1923 were able to meet all interest obligations and other charges with the exception of depreciation, while the operations of the lumber mills about covered the cost in connection with the Gatineau properties. If there were only a small improvement in the bleached sulphite situation, the Riordon Mills would be able to earn depreciation as well as fixed charges and thus pay their way.

Laurentide Company Buys New Limits

The fact, hitherto not generally known, that Laurentide Company, Limited, in the fiscal year ended June 30, 1924, added substantially to its timber reserves, was revealed at the annual general meeting of shareholders held in Montreal at the office of C. R. Hosmer, with the president, George Chahoon, Jr., in the chair. The addition to the timber reserves, Mr. Chahoon pointed out, was largely responsible for the size of the company's bank loan. He explained that this loan would be steadily reduced as the timber supply is used up. Commenting on the inventories, he stated that owing to the fires of last year it had been found necessary to cut over much of the affected areas to prevent deterioration of the wood, this being responsible for the relatively large figures at which inventories stood at the close of the year. Attention was called by Edwin Hanson, a director, to the exceptionally large allowance for depreciation, it being about $400,000 above that charged to this account in the preceding year. This he regarded as a very important point, showing the conservatism of the management, and one worthy of more appreciation by shareholders in general. A shareholder, Mr. Mr. Blackader, said that his records showed that he had been a shareholder in the Laurentide Company for the past 20 years. During this time, changing conditions had brought the company face to face with a great many difficulties—times in which prices and earnings were low and operations trying and times affected by war and other unsettlements. He felt that it was a great tribute to the directors and management that the company had forged steadily ahead. Today, he said, two things are regarded as inevitable, death and taxation. "Might we not," he said, "add a third item to this list—the dividend on Laurentide's capital stock." Mr. Blackader then moved a vote of thanks to the directors and management which was responded to by the president and C. R. Hosmer, the vice-president. The retiring board of directors was re-elected without change in personnel.

Thinks News Print Price Mey Be Reduced

The price of news print and the advisability of an embargo or an export tax on pulpwood came in for informal discussion at the first annual general meeting of St. Lawrence Paper Mills, Limited, in Montreal. President N. A. Timmins, felt that it was probable that the price of news print may be reduced a few dollars a ton, but added "We are quite satisfied that even at a reduced price, there would be quite enough in it for us to carry on and make a good showing." Mr. Timmins declared that from the Canadian standpoint an embargo on the export of pulpwood would be a good and desirable thing. By embargo he did not mean absolute prohibition, but a tax of a few dollars a cord, increased until the wealth of the country came to those who ought really to benefit by it. Such a tax for a few years would give American mills time to adjust themselves to the changed conditions or come into this country. He concluded by stating that several attempts have been made to solve this problem and the time is now ripe for some action. Ernest Rossiter, general manager, stated that the news print manufacturers should get together and present a united front, and formulate a national policy on such an important natural resource as pulpwood. The present market price of news print, he stated, was simply holding an umbrella over the weaker producers, while the strong and low cost producers were situated in Canada. Referring to the work of the pulpwood commission, he stated that a few business men could have done all that was required by consulting records on hand. The board of directors was re-elected without change.

New Power Company in Laurentian Mountains

Hon. L. A. David set in motion for the first time the machinery forming the first unit of a great power development, at St. Marguerite, Que., a day or two ago. The plant is that of the Laurentian Hydro Electric Company, on the North River, midway between Mount Rolland and St. Marguerite stations on the C. P. R. line, and is stated to be the first unit of a great power development to come later. The initial units comprise a plant developing 2,000 hp., the final objective of the development being 14,000 hp. The plant has cost around $600,000 so far. The mayors of St. Jerome, St. Therese and St. Agathe met the visiting party at Place Viger station and all proceeded to the plant together. A meeting was held at which the Hon. L. A. David formally turned on the power, and the work was blessed by the Rev. Father Lesage, Cure of Ste. Adele. The party from Montreal included: President J. H. Sherrard, with the vice-president, Hon. L. A. David, and the directors of the company, comprising Messrs. J. S. Bock, president of the Eagle Lumber Company; Thomas Jones, of the Mutual Life Insurance Company; Ovila Hogue, of the Colonial Piano Company, Ste. Therese; Fred Brown, of the Walter J. Francis Company; Ernest Savard of E. Savard, Ltd.; and Major Browne, of Browne, Urquhart & Company.

Fewer Forest Fires This Year

Forest fires have caused comparatively little damage to Canada's timber resources this year, according to Robson Black, secretary of the Canadian Forestry Association. Whatever other criticism may be made of the weatherman's conduct of affairs in 1924, plentiful rains have so drenched the woodlands that fires which have started

(*Continued on page* 58)

Improved Methods and Machinery Offset High Labor Cost!

The Beloit Removable Fourdrinier Gives Added Hours of Production!

Changing a Wire in an Hour or Less Is a Common Occurrence

Beloit Iron Works — Established — **Beloit, Wis., U.S.A.** — Since 1858

On Nov. 4th, 1920, 26,000,000 people voted, BUT 27,000,000 did not. VOTE NOV. 4th. VOTE AS YOU PLEASE, but VOTE.

Editorial

Vol. LXXIX New York, September 25, 1924 No. 12

HENRY J. BERGER, Editor

BUSINESS IS BETTER

Business is better. Improved sentiment, according to the First National Bank of Boston, which appeared a month or two ago, has been justified by definite increases in manufacturing and trade. This increase is largely seasonal, but beyond that in a comprehensive list of industries there has been a pronounced quickening. Some of the darkest spots, such as cotton textiles, have become less dark, while all along the line somewhat more volume at slightly better prices is being realized. The cotton mills, having passed through a period of most drastic curtailment, are reopening or operating more hours. Buyers, after having for weeks failed to make bids in sufficient quantity at anything like reproduction costs, are now offering prices tempting to manufacturers, who are eager to operate on full time. More goods are being made and sold, albeit at narrow or no margins of profit. The cotton crop estimates, indicating the possibility of something under 13,000,000 bales, resulted in a decline of December futures to under 23 cents, a figure which mill men estimate will cause an expansion in demand for finished goods made on that basis. Certain reorganizations and passing of dividends in both cotton and woolen enterprises of importance are evidence of the strain through which these industries have been passing. Motor production for the first eight months of the year, 2,529,481 cars and trucks, is within 10 per cent of the 1923 banner year. The output, which was sharply curtailed in the spring, is rapidly increasing. The steel industry is operating at a greater pace, the Steel Corporation being up to nearly 60 per cent of ingot capacity. The latter's unfilled orders, in spite of greater production, showed a welcome increase last month. Car loadings have again risen above the million-a-week figure, testifying to the large volume of goods in transit. Significant also is the comparison of bank clearings, which are running a full 25 per cent over the 1923 figures. Building construction, which affects so vitally employment, and which had supposedly reached its peak, continues—according to statistics covering 36 states —at a level 10 per cent above last year. The crop situation is affecting favorably general business, the major crops, barring corn, being likely to show larger yields than last year. The short yields in Canada and moderate crops elsewhere throughout the world have brought about an advance in prices of the greatest possible advantage to the agriculturist and through him to all branches of trade. The formal launching of the Dawes plan on September 2 had a most reassuring effect on business sentiment as a definite step forward toward regaining normal business relations. With trade already on the up-grade and with so many favorable factors underlying the situation, predictions of a boom by the year-end are being made. Apparently, however, that is not the consensus, for merchants are as a rule maintaining their long-continued policy of sticking to short commitments. Hand-to-mouth buying is still the order of the day. They are no doubt influenced in this by the realization that a large portion of the recent improvement is seasonal, and feel justified in expecting only moderate business activity under very keen competitive conditions.

The fine paper business has already begun to show in a healthy and normal way the return of better conditions. There was a noticeable improvement in demand during August. Current orders are now in line with production, but the average rate is only about 4½ days per week. Stocks on hand at the mills show no further increase. Inventories in the hands of printers and merchants are below normal, and they are already beginning to replenish, reflecting the demand of the consumers, as large orders for direct-by-mail advertising and catalogue work are now being placed. Magazine advertising has thus far this year exceeded by 4 per cent the volume reported for the same period in 1923.

As reflected in the press, one of the difficulties which the makers of rag content paper are meeting is the high price for, and limited offerings of rags. The price of pulp has slightly increased above the low levels ruling this year.

FOREIGN PAPER AND PULP PRICES

The monthly average import price of news print for July declined slightly as compared with June, according to statistics just issued by the Department of Commerce at Washington. The average price for news print imported into the United States during the former month was 3.74 cents as compared with 3.76 for the latter and 3.75 cents for July of last year.

The average import price of pulpwood showed a slight increase for July as it has been doing for some months past. The average price per cord for the month was $11.23 as compared with $11.13 for June, $10.19 for May, $9.51 for April and $10.72 for July of last year.

The average import price of ground wood for July was $32.96 per ton as compared with $32.52 per ton for June and $33.60 per ton for July of last year.

The average import price of unbleached sulphite pulp for July was $52.29 per ton as compared with $52.90 per ton for June and $61.16 per ton for July of last year.

The average import price of bleached sulphite pulp for July was $71.81 per ton as compared with $82.35 per ton for June and $86.22 per ton for July of last year.

The average import price of unbleached sulphate pulp for July was $54.83 per ton as compared with $57.86 per ton for June and $68.10 per ton for July of last year.

The average export price of news print paper from the United States for July was 5.10 cents per pound as compared with 5.20 cents per pound for June which also was the average price per pound for July of last year.

QUALITY STANDARDS

Recent progress in the adoption of quality standards by American manufacturers is set forth in a bulletin just issued by the Department of Manufacture of the Chamber of Commerce of the United States.

"The buyer to-day," says the bulletin, "finds it a physical impossibility to inspect all his purchases. He accepts most of them on faith in the seller or on faith in the standards set up by the industry dealing in the commodities he requires.

"Where individual producers guarantee quality they in time build up what we term 'good will,'—a valuable business asset. Why should not all manufacturers in any line co-operate in affording the buyer the same protection?

"It is being done, as the list of associations which have adopted such standards shows, but it should become a universal practice not only in our domestic trade but in our dealings abroad. Secretary Hoover in discussing our opportunities for world trade mentioned the establishment of standards of quality which would insure foreign buyers getting just what is promised them in sales transactions, as an important and vital factor.

"'Made in America—quality guaranteed' may be made to carry a trade prestige abroad where neither price nor advantageous terms would."

The Department gives a list of thirty-two trade associations which have already adopted quality standards. The American Association of Wool Blanket Manufacturers, for example, has established three standard grades of wool blankets and has adopted a quality seal and label which is issued to members meeting quality requirements. The American Bakers' Association, co-operating with the Department of Agriculture, has promulgated standards and definitions for bread.

The Association registers baking materials and issues certification of quality. The American Petroleum Institute, the Concrete Products' Association, the Interstate Cotton Seed Crushers' Association and others have followed a similar course.

A study of the experience of these associations and the methods followed has been made by the Department of Manufacture of the National Chamber.

Bids and Awards for Government Paper

WASHINGTON, D. C., September 22, 1924.—The Government Printing Office will receive bids on October 1 for 11,550 pounds (100 reams) of various sizes double coated both sides rag book paper.

Bids will also be received on the same date for 2,000 pounds of 22 x 28—198 blue railroad board.

The Government Printing Office has received bids on the following: 5,000 pounds oiled manila tympan paper, basis 24 x 36—86 in 48 inches, Dobler & Mudge 9.5 cents per pound; Broderick Paper Company 9 cents; Maurice O'Meara Company 8.3 cents; Mathers Lamm Paper Company 8.9 cents; and 9.25 cents; T. A. Cantwell & Company 9.5 cents; Barton Duer and Koch Paper Company 7.85 cents; Paper Manufacturings Company, Inc., 10 cents; Thomas Barrett & Son 9.375 cents; Cromwell Paper Company 13.5 cents and on 3,200 pounds white paraffin paper, 24 x 38—16, the following bids were received:

R. A. Cauthorne Paper Company $1.99 per ream; Bennington Wax Paper Company $1.84; T. A. Cantwell & Co. $1.54; and $1.64; Carter, Rice & Co. $2.48; Old Dominion Paper Company $1.5796; $1.6826; Wolverine Paper Company $2.16; Broderick Paper Company $2.49; Republic Bag and Paper Company $2.17; Maurice O'Meara Company $1.97; R. P. Andrews Paper Company $1.74; $1.64; and $2.42; Safetee Glass Company $2.16 and Whitaker Paper Company $2.20.

The Government Printing Office has announced the following paper awards:

The R. A. Cawthorne Paper Company has been awarded the contract for furnishing 8,000 lbs. of 19 x 24—80 blotting paper, 4,000 pounds of white at 8.62 cents per pound and 4.000 pounds of buff at 8.77 cents, bids for which were opened on August 22.

Reese & Reese will furnish 32,000 pounds (2,000 reams) of 21 x 32—16 No. 9 white sulphite manifold paper at 9.39 cents.

The R. P. Andrews Paper Company will furnish 121,500 pounds (1,500 reams) of 31½ x 48—81 No. 20 white sulphite bond paper at 6.95 cents per pound. Reese & Reese will furnish 2,000 pounds (100 reams) of 17 x 22—20, No. 20, white declaration bond paper at 27.425 cents and the Allied Paper Mills will furnish 5,400 pounds (150 reams) 21 x 32—36 No. 20 yellow sulphite writing paper at 7.75 cents per pound. Bids for these items were opened on Sept. 3.

Getting Ideas for Pulp Mill at Alexandria

George C. Merkel, secretary-treasurer of the Alexandria (La.) Chamber of Commerce sends the PAPER TRADE JOURNAL the following under date of September 19:—

Much information of value to the Industrial Committee of the Alexandria Chamber of Commerce was gathered yesterday, when a delegation of business men, representing the Alexandria Chamber of Commerce, visited the recently constructed paper and wood pulp mill of the Brown Paper Company, Inc., of Monroe, of which H. Lutcher Brown and Geo. S. Holmes are the executives in charge.

It was through the courtesies of these men that the Alexandria delegation, consisting of Col. Wm. Polk, chairman of the Industrial Committee of the Alexandria Chamber of Commerce; A. Wettermark, General Chairman of the Alexandria Industrial Fund; V. V. Lamkin, John W. Ball and I. W. Sylvester, city engineer, were enabled to make a thorough inspection of this recently constructed, most up-to-date type of pulp and paper mill, erected at a cost of three million dollars, and which will serve as a model for the pulp mill to be built at Alexandria, as soon as the organization of the $3,000,000 corporation is completed.

Because of the first class gravel highway connecting these two industrial cities of Central and North Louisiana, the Alexandria party covered the 100 intervening miles in but a few hours. After learning of the plans and successful methods of organization, raw material contracts, etc., discussed in the elaborately finished and efficiently arranged offices of the company, the inspection of the plant was begun.

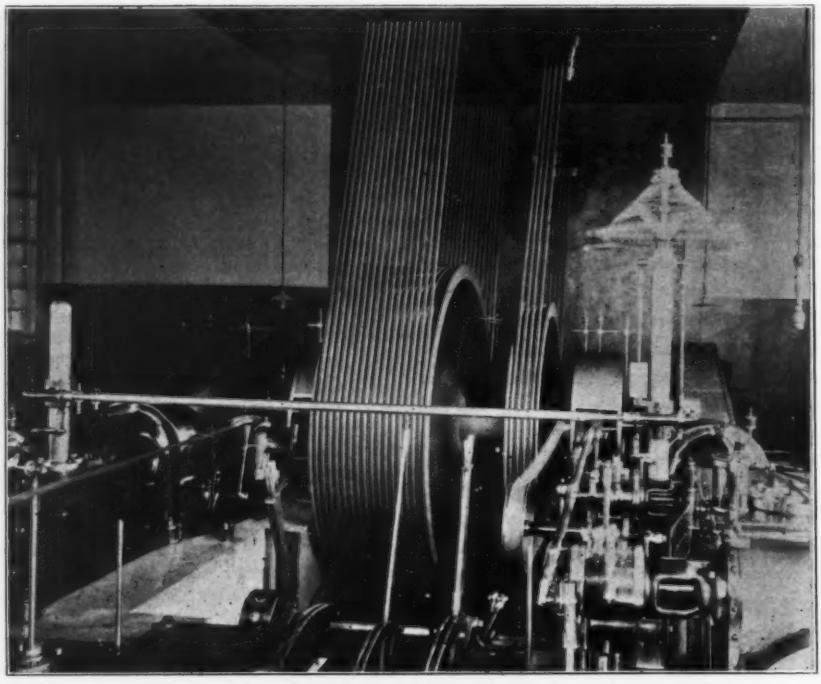
The committee of Alexandria business men were greatly impressed by the visit thus made, which has spurred them on to a greater zeal in the bringing to a successful fruition the plans for the pulp mill at Alexandria. The mill planned for Alexandria, and in which a number of the leading business men operating saw mills and owning thousands of acres of timber land on which almost an unlimited supply of the raw material to be used in the Alexandria pulp mill, is located, appears not far in the offing, and the Alexandria Industrial Fund of $50,000,000 now being raised, will greatly assist in completing the plans, locating the mill and its kindred manufacturing plants, using the by-products of the forests, brought about through the location of such a pulp and paper mill at Alexandria.

Kalamazoo Superintendents Elect Officers

KALAMAZOO, Mich., September 22, 1924.—Officers were all re-elected at the annual business meeting of the Michigan division of the American Pulp and Paper Mill Superintendent's Association, held Thursday evening at the Park-American hotel.

The hold overs are: President, E. H. Gilman, Bryant Paper Company; first vice-president, Michael Redmond, Kalamazoo Paper Company; second vice-president, George Pountain, Allied Paper Company; third vice-president, A. G. Wightman, Hawthorne Paper Company; secretary-treasurer, Jacob Parent, Western Board and Paper Company.

Plans for the 1924-5 series of meetings were taken up. Secretary Parent announced that while in the past all the addresses had been on technical topics as particularly relating to the paper industry, that the coming year will see a variety offered. One of the first diversions will be to sound the membership regarding the advisability of holding a dinner and social session for the members and their wives.



Nine Years of Continuous Service

and it looks good for a great many years more. The Columbian Transmission Rope, illustrated above, has operated the main drive in a coal breaker for nine years, and yet it shows very little wear.

Mine and Mill owners are enthusiastic about the long satisfactory service which Columbian **Tape-Marked** Pure Manila Transmission Rope is giving them. Many of them tell us that they are putting Columbian on all their drives, for then they can forget about the power question entirely.

The next time you order Transmission Rope, specify Columbian, and take advantage of that extra margin of service. In the meantime, a postcard will bring you a copy of the new and complete, "Columbian Book of Rope Transmission."

Columbian Rope Company

342-60 Genesee Street

Auburn, *"The Cordage City"* N. Y.

Branches: New York Chicago Boston New Orleans

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

DRYING PAPER[1]

By C. H. Liecester[2]

The art of drying paper is an extensive one and involves the consideration of a number of factors, every one of which plays a more or less important part in determining the economy of the process.

The process is nothing more than the separation of the water from the pulp, first of all by mechanical means, and then by the use of heat, using the latter to vaporize the water that is left in the sheet after the mechanical process is complete.

Mechanical Forces in Use

From the foregoing facts, it will be plain that loss in efficiency of the mechanical end must be made up by the increase of supply of heat. The mechanical forces in use are:

1. The constant motion of the wire screening the major portion of the water through the screen mesh.

2. This screening increased by the use of suction boxes over which the wire passes.

3. The pressure of the sheet between press rolls over which the felts are running. The latter absorbs the moisture and discharges the same in proportion to the possible percentage of absorption and the pressure. This process is repeated through the first, second and sometimes third press.

In practice, it is found that this percentage is very variable, due largely to the condition of both felts and press rolls. By moisture tests which have been made, it has been found that on entering the dryers the sheet contains a variable percentage ranging from a maximum of 78 per cent to a minimum of 68 per cent. It is not necessary to remove all this moisture. As the sheet leaves the dryers a moisture content of 5 per cent is allowable.

The difference of these two percentages will mean necessary work for the dryers as follows: With the maximum moisture content it will require 4.18 lbs. per lb. of paper on entering the dryers; that is, for 1 lb. of paper the dryers must evaporate 3.18 lb. of water. With the minimum moisture content it will require 2.875 lb. on entering the dryers. For 1 lb. of paper the dryers must evaporate 1.875 lb. of water. That is, the dryers must perform 70 per cent more work with the maximum moisture content than they would with the minimum.

It will be noticed that in plotting pounds of water to be evaporated in the 10 steps of moisture content, they do not follow a straight line but an upward curve. Thus, the difference in moisture to be evaporated between 68 per cent and 69 per cent is only 0.092, whereas the difference between 77 per cent and 78 per cent is 0.18.

Pounds of water per pound of paper to be evaporated:

68	per	cent	1.875
69	per	cent	1.967
70	per	cent	2.066
71	per	cent	2.172
72	per	cent	2.285
73	per	cent	2.407
74	per	cent	2.538
75	per	cent	2.68
76	per	cent	2.833
77	per	cent	3.
78	per	cent	3.18

Note—All tests which have been made here of moisture contents show a maximum range of only 4 per cent.

It will be evident from these comparisons that the study of the various factors responsible for this wide range of moisture content is important, because fuel, which produces steam, is, next to logs, the biggest item of expense in the manufacture of paper. The principal factors to consider are: the wire, the suction boxes, the press rolls, and the felts.

Difficulty in the Study

In this study, however, there is this difficulty. There is at present no method of keeping a continual record of moisture content, and the practice has been to base all calculations of performance of felts, press rolls, and wire on steam consumption. Such practice is unreliable because a much wider range of steam consumption may occur, with almost equal moisture content, due to the condition of the machine itself. In practice it is found that the pounds of steam required to dry one pound of paper is an exceedingly variable quantity.

It is evident that if we assume the dryers themselves are at all times in the same condition and running at the same speed, the variable moisture content will have a definite proportion to the amount of steam required to dry the paper, not taking into consideration the variable quality of the stock, which, however, can have but slight effect on the heat necessary for drying. (Some will question this.)

The actual amount of heat required to evaporate 1.875 lb. of water under atmospheric pressure of 14.7 lbs., assuming a temperature of 60 degrees F., is 2,011 b. t. u. plus 70 b. t. u. to raise one pound of stock to 212 degrees. With a back pressure of 5 lb., this quantity of latent heat is given out in the condensation of 2.17 lb. of steam. A moisture content of 78 per cent will require 3.63 pounds.

In practice it is found that the steam actually used at the machines will vary from 3 to 7 lb. per pound of paper. If the moisture content is 68 per cent and paper is being dried with 3 lb. of steam per pound of paper, the efficiency of the dryers is 72 per cent. If 4 lb. are used, the efficiency has dropped to 54 per cent. It will be noted that efficiency is calculated on latent heat only and

[1] From Crown-Willamette *Making Paper.*
[2] Chief engineer Pacific Mills, Ltd., Ocean Falls, B. C.

not total heat. This appears to be fair since the heat contained in the condensate is returned to the boiler room. These results are rarely obtained in practice, and only under the most favorable conditions of hoods and ventilation.

What Experiments Have Established

A few experiments which have been made in this plant appear to have established one fact: viz., that these last two named items are very large factors in the drying efficiency of the machines. Owing to the fact that heated air at this plant is introduced into the machine room in large quantities and this at the expense of the consumption of live steam, it does not appear to be fair to form comparisons with other mills where they do not use steam for this purpose unless the steam so used is taken into consideration and charged against the machines using it.

On No. 3 machine here, a new hood was put in last April 30, the same being some 15 inches higher than the old one. From the day the machine was started up, it was at once noticeable that steam consumption had gone up, and this has continued to the present day. The following is a table of steam per pound of paper on No. 3 machine:

January	4.3	June	3.73
February	4.06	July	4
March	3.5	August	4.01
April	3.3	September	4.32
May	4.44	October	4.35

In May, then, steam consumption was increased 25 per cent above that of March and April. During one week in June we were experimenting with baffling air currents in this machine. Most definite changes in machine efficiency were at once noticeable, live steam consumption coming down to a point never before reached on this machine. The back pressure came down also, and this without making any changes whatever in any part of the machine other than the putting up of baffles.

Another Difficulty Encountered

This would appear to establish the importance of studying the circulation of the heated air through the machine itself. Here again we are met with this difficulty; that is, the impossibility of being able to record at all times the actual work that the dryers are doing, because we cannot record the variable moisture contents. It would undoubtedly be of assistance in this study if, at the moment when samples of wet paper were taken, all other conditions were recorded; viz., speed, back pressure, live steam flow, actual time of usage of all clothing, and also atmospheric conditions. It is possible to detect changes in efficiency, though impossible to calculate what those changes are.

We can, however establish this fact: an increase of 5 per cent efficiency would mean an annual saving in this plant of about $14,000, and I am of the opinion that a considerable increase of this 5 per cent is within reach from a careful research and experimenting under competent management.

Marked Effect in Decreasing Efficiency

One very common mechanical failure of the dryers has a most marked effect in the decrease of efficiency, viz., the breaking of the dippers, or other arrangements to remove water from the dryers. It seems probable that this, of all existing conditions, plays the largest part in the loss of efficiency, and it should demand the most careful consideration of the mechanical department, and it calls for a better and more dependable design of that part of the machine.

Where reciprocating engines are used in which the exhaust is allowed to go to the dryers, the exhaust carries over all the oil from cylinder lubrication. This is beyond all question another source of efficiency loss, and is easily explainable.

The low conductivity of oil, which gathers on the surface of the dryers, causes a much lower heat transfer rate from the condensed water to the sheet. There must always be a film of water surrounding the entire surface of the dryer, so long as any condensation is taking place, and the centrifugal force holds that film in position. The floating oil, being lighter, will remain on the steam side of that film. Under such conditions, the water cannot pick up steam, and the oil which has hardened on the dryer surface, together with that which is floating on the water surface, becomes a double hindrance to heat transfer.

This fact appears to be plainly demonstrated as the result of installation of good oil separators on No. 1 machine:

	Steam per lb. of paper	
	No. 1	No. 2
April	4.02	3.6
May	3.9	3.6
June	4.0	4.0
July	3.95	4.0
August	3.57	4.02
September	3.42	3.75

Note the gradual decrease in No. 1 which would be the tendency, as oil was gradually washed off the surface of the dryers.

An Easily Avoidable Expense

Mention has been made of the heating coils and fans for distribution of hot air in machine rooms. This system is a very easily avoidable expense. It involves a usage of about 122,000 pounds of steam per day at an annual cost of $11,000 for fuel. Possibly 12 per cent of this heat returns to the boiler room. This is one of the items that could be substituted by the use of the waste gases from the boiler room. In the consideration of heat losses, this item is the greatest of them all, amounting in this plant to about $96,000 a year.

All the necessary heating of the entire plant and the supply of hot air to the machine rooms and grinding room could be accomplished without the use of one single pound of steam, from heat derived from this source. Owing to the fact that a large fan and air duct are already installed from the boiler room to the machine room, the expenditure for completion of such a system would be very small.

The speed of the dryers must, of necessity, affect the efficiency, since heat transfer rate is a definite factor in relation to time. Therefore, an increase of speed will result in the sheet being in contact with the dryers a shorter time.

In former papers the subject of machine room ventilation has been dealt with, and it is not, therefore, treated here. It is, however, an important factor in effecting machine efficiency.

New Steel Link V-Belt

Reeves Pulley Company, Columbus, Ind., manufacturer of "The Reeves" Variable Speed Transmission has designed and perfected a new steel link V-belt which is said to represent the most important and practical improvement ever made for a variable speed transmission device.

The construction of the new belt embodies the hardened steel link chain which is flexibly bound together by double frictionless rocking pins. It is a modification of a well known reliable steel chain belt, strengthened by cross steel pins to withstand the side pressure brought upon the belt when used between the cone discs on Reeves Transmission. Leather tips which are cemented and riveted to steel tabs are securely fastened to the belt sides at an angle conforming to the V-shaped groove of the transmission discs.

It is claimed that the new steel V-belt is practically unbreakable. Due to its extreme flexibility, it will run smooth, even and true at all positions of the discs. It is also very quiet in its operation.

The steel belt is easily and quickly installed on transmission—no tools are necessary. It is self cleansing and requires only a few drops of good grade machine oil to insure proper lubrication. This belt can be furnished on new transmissions when specified by customer, and can be applied to Reeves Transmissions now in service.

A STUDY OF FLAX STRAW FOR PAPER MAKING[1]

By JOHN D. RUE[2], SIDNEY D. WELLS[3], AND E. R. SCHAFER[4]

The rather lively interest manifest at present in the possible utilization of flax straw for paper makes it seem desirable to publish some recent results obtained at the Forest Products Laboratory, even though the work is as yet far from complete. It is felt that this information may assist in estimating the feasibility of projects frequently proposed and may save other investigators the necessity of covering the same ground.

Object

The investigation was undertaken with two objects in view:

1. To relieve the chronic scarcity of linen rags for the manufacture of bank note, currency paper, and other high-grade papers for which great toughness, resistance to wear, and other characteristics obtained by using linen are desired.

2. To aid in preventing the large waste of a potentially valuable raw material now taking place annually throughout the Northwest on account of failure to use more than an insignificant amount of the flax straw obtained in the growing of flax for linseed.

To one not familiar with the subject it would seem most incongruous that a fiber for which there is an urgent need in paper making should be burned or allowed to rot in the fields each year to the extent of over a million tons of straw, but such is the case; and the reason lies in the fact that while known methods of purification without injury to the fiber can be employed when a relatively very high-priced material such as a textile fiber is the object, the price which the paper manufacturer can pay will not cover the cost of the operation. The quality demanded in linen rag papers is such that no processes can be used in which the "bast" fiber is in the least weakened, and yet the presence of woody or other matter not bast must be avoided. For this reason only linen rags or clippings from the manufacture of linen articles have been used in this grade, since thereby, at only the price of rags, the benefit of the expensive purification given the textile is obtained. In addition to rags and linen clippings there are available for appropriate grades of paper the wastes from the scutching, spinning, and weaving mills, all highly refined products in comparison with the original flax straw.

Besides bank note, currency, and special writing papers, however, there are grades such as cigarette paper, electrical condenser and insulation papers, and counterboard, in which certain amounts of linen fiber are desirable. All these products command an enhanced price on account of the special characteristics required, and it is obvious that in their manufacture the utilization of the straw would seem most advantageous. Nevertheless, little commercial progress in this direction has as yet been made.

The culture of flax in the United States is primarily for the production of seed. When grown for seed the plant is allowed to branch and is shorter and bushier than when grown for its fiber. In the latter case branching is prevented and a long single stem is produced. This difference results in a greater proportion of woody material and knots ("shive") in the case of seed flax, which renders the straw unfit for textile purposes. Its only utilization of any consequence at the present time is in the manufacture of tow for upholstery, coarse rugs, and heat insulation material.

At present only 200,000 tons of the straw are purified annually for all commercial purposes. The remaining one million tons are burned, and the fiber is a total loss.

Location of Flax-Growing Areas in the United States

Collection of the flax straw is somewhat simplified by the fact that the material is grown in a fairly localized area. Table 1 indicates the area under cultivation and the amount of straw available in the United States as a whole and in the several states where extensive cultivation is practiced. This information is taken from reports by the Bureau of Census and the Department of Agriculture. The total area under cultivation in the year 1909 was 2,083,142 acres as compared with 1,260,687 acres in 1919, or a decrease of 39.5 per cent in the decade. In 1920 the acreage was 1,757,000; in 1922, 1,341,000. This decrease may be attributed to economic and

FLAX HARVEST

agricultural causes, the chief of which was the decrease in the development of new land.

The principal production of flax straw takes place in States in which there are few or no paper mills.

Although the cultivation of flax is waning, the need for additional supplies of seed is acute. A large portion of our consumption is imported. In 1921 imports into the United States were 13,632,073 bushels, while domestic production was 8,029,000 bushels. Up until 1908, however, instead of being an importing nation we exported from 4 to 6 million bushels from a production ranging between 25 and 30 million bushels annually. The linseed oil industry is alarmed at the outlook and undoubtedly would whole-heartedly support any efforts to make the crop more valuable. An outlet for straw at a profit to the farmer would tend to stabilize the cultivation of flax and remove the causes for its migratory character. With the establishment of paper mills or at least pulp mills in flax-growing areas and with co-operation between the farmer and the manufacturer, in much the same manner as prevails in the beet sugar industry, better yields of straw of better quality could be profitably produced, and the mills could count on a regular and sustained supply within a short distance of their sites.

Composition of the Straw

From the standpoint of the paper maker the valuable portion of the flax is the bast fiber ocurring between the cambium layer (which

[1] Acknowledgement is due R. H. Grabow, who carried on prior to September, 1923, a considerable portion of the investigation here discussed, and B. S. Summers, who has acted in an advisory capacity. Every member of the Pulp and Paper Section has been called on from time to time in carrying on various phases of the investigation.

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surrounds the central wood or pith) and the epidermis or outer coating of the stem, also called the cortex or bark. In volume or weight the pith and cambium layer comprises from 75 to 80 per cent of the total, the bast from 15 to 20 per cent, and the cortex from 5 to 10 per cent. The bast when removed by breaking the other portions to dust will usually come out in long filaments, sometimes as long as the original stem. This is the state of the fiber known as "tow." The ultimate fiber varies from 1¼ to 1¾ inches in length and from 1/800 to 1/1000 inch in diameter.

The filaments consist of bundles of fibers with their tapering ends overlapping slightly and cemented together by means of pectose, a gummy substance soluble in dilute alkalies. In any adequate pulping operation the pectose is dissolved and the bast is reduced to its ultimate fiber. The remainder of the stalk consists of cells varying in diameter from 2/3 to 6/100 of their length. Such material, referred to hereafter as "towing waste," is of little account for imparting strength to paper, but it can be bleached if cooked under proper conditions and so, when clean and of satisfactory color, would have as much value as china clay for paper making purposes. The bast differs from the rest of the stalk not only in physical characteristics but also in chemical composition. Analyses of bleached and unbleached linen, unspun flax fiber, and the woody portion of the stalk carefully separated from the bast by hand are indicated in the following table:

TABLE 1

AREA DEVOTED TO FLAX CULTURE IN THE UNITED STATES
The amount of Straw Produced May Be Estimated Approximately by Assuming Three Quarters of a Ton Per Acre

	1899[1] Acres	1909[1] Acres	1919[1] Acres	1921[2] Acres	1922[2] Acres	1923[2] Acres
Michigan	883	216	1,297	.....	.....	.....
Wisconsin	11,263	9,423	7,133	6,000	4,000	8,000
Minnesota	566,801	358,426	288,240	314,000	310,000	527,000
Iowa	126,453	15,549	9,646	8,000	8,000	9,000
Missouri	100,952	20,630	399	.....	.....	.....
No. Dakota	773,999	1,068,049	649,949	430,000	521,000	1,094,000
So. Dakota	302,010	518,566	159,234	216,000	162,000	284,000
Nebraska	7,652	2,934	1,344	3,000	3,000	4,000
Kansas	192,167	45,014	12,368	20,000	20,000	24,000
Montana	16	37,647	128,851	110,000	84,000	110,000
Wyoming	.....	1,110	1,208	1,000	1,000	1,000
Washington	149	1	91	.....	.....	.....
Oregon	2,016	38	250	.....	.....	.....
Total U. S.	2,111,000[2]	2,083,000[2]	1,503,000[2]	1,108,000[2]	1,113,000[2]	2,061,000[2]

[1] Statistics obtained from the Bureau of Census.
[2] Statistics obtained from the crop reports, U. S. Department of Agriculture. The maximum area devoted to flax was in 1912 when 2,851,000 acres were reported in the United States.

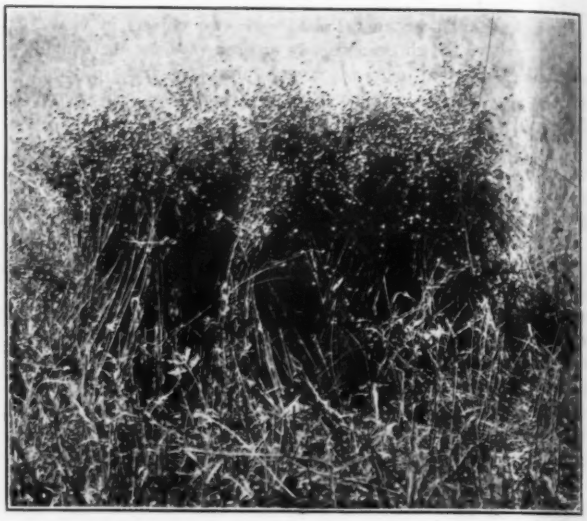
A SHEAF OF FLAX

CHEMICAL COMPOSITION OF FIBER FLAX IN VARIOUS STAGES OF REFINEMENT

Form of Material	Lignin Per cent	Pentosan Per cent	Cellulose Per cent
Scutched fiber	6.4	2.1	92.5
Unbleached linen cloth	5.7	3.1	93.0
Bleached linen table cloth	.15	....	100.01
Woody portion of stem	27.1	22.2	47.2

The data shows that the bast is very high in cellulose, even in the unbleached state, and comparatively free from lignin or the pentosans. On the other hand the woody portion contains less than four-fifths of as much cellulose as wood, is high in lignin, and is very high in the pentosans.

In the raw material the bast fiber is associated not only with a great amount of woody matter from the stem but also with the chaff from the seed and, under the usual methods of cultivation in the Northwest, considerable quantities of weeds, cereal straw, burrs, seeds, etc., which greatly aggravate the difficulties encountered in isolating the bast.



AN OPEN FLAX SHEAF

Methods of Disintegrating the Straw

The methods that have been employed in disintegrating the straw of seed flax for paper making may be classed as mechanical or chemical operations or a combination of the two.

The mechanical methods consist of a first dusting to remove chaff, litter from dried leaves, and similar material; towing or crushing the stalk between pairs of revolving fluted rolls; and a second dusting out of crushed woody matter to obtain the bast as clean as possible, at which state it is known in the trade as "fine tow." They only bring about a partial separation, so that it is impossible to get a tow containing less than 50 per cent of woody matter without excessive loss of bast in the shive which is dusted out. Towing tests with a Winona break conducted at the plant of the Union Fiber Co., at Union Grove, Wis., in January, 1923, illustrate the point. The break consisted of eight pairs of fluted rolls operating at 114 r. p. m. and one picker roll at 120 r. p. m. The straw was from seed flax grown at Mayville, Wis., in 1917 and has been baled without dusting. Before being fed to the machine it was dusted to some extent by shaking up with a fork. The yields of tow obtained, however, are based on the original weight of baled straw. Results are shown in the following table:

Grade	Weight of Straw Run Pounds	Times Through Machine	Weight of Tow Obtained Pounds	Yield Per cent	Dryness Per cent
Medium tow	886	2	540	61	83
Fine tow	1,475	4	768	52	83
Extra fine tow	2,032	8	835	41	83

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To afford an idea of how much shive is removed each time through the machine, runs were made at the same plant on kiln dried straw which had been dusted by forking. The yields obtained are based on the weight of the dusted straw, and are shown below. The straw was 92 per cent dry.

Times Through Machine	Weight of Material Fed Pounds	Weight of Tow Obtained Pounds	Yield on Basis of Material Fed Per cent	Yield on Basis of Original Dusted Straw Per cent
1	230	170	74	74
2	170	139	82	60.5
3	139	113	81	49
4	113	97	86	42

The more rapid removal of the woody matter in the second series of tests, even though run on dusted straw, was doubtless due to the drier condition of the material. While the quality of the tow improved each time, however, the quantity of bast lost in the shive increased, and a point was soon reached where the losses were becoming prohibitive. The woody matter also persisted even though reduced in quantity, and it is doubtful if it could ever be reduced by use of machines of that nature below the proportion of one part to two of bast fiber.

Combined Mechanical and Chemical Treatments

On account of the difficulty of removing the woody matter from the bast by mechanical towing alone with a reasonable amount of labor or expense it is obviously necessary to resort to the use of chemicals and steeping or digestion of the two at elevated temperatures either to dissolve the woody matter or to so disintegrate it that it may be readily removed. If the product is to be used in high-grade papers this action must be brought about without any injury to the bast; and it is with this purpose that investigators have worked on the problem since flax has been grown for linseed oil, but without success.

Milk of Lime (Calcium Hydroxide)

Before the Forest Products Laboratory took up the work it was carried on by the Bureau of Plant Industry under the direction of J. C. Merrill. He obtained some excellent results, on a laboratory scale, in treating an extra-fine tow prepared on a towing machine of his own design with milk of lime, using the methods commonly practiced in fine mills with rags. When his methods were tried in a paper mill, however, the difference in the volumes of material used and the changed ratios of volume to surface and also to volume of water available in washing were such that results were unsatisfactory. The shive is so slightly softened by lime that its entire removal by any of the known paper making operations when so treated seems highly improbable, barring unreasonable expenditures of water or labor. For this reason the lime cooks were not repeated or modified.

Sodium Hydroxide

No cooks in the present investigations were made with sodium hydroxide alone on account of a number of cooks which were made with this chemical at the Forest Products Laboratory in 1919 on tow prepared on Mr. Merrill's towing machine. The paper obtained, gave excellent strength tests, but its color and appearance discouraged further work.

Sodium Hydroxide and Sodium Sulphide[5]

Encouraging results were obtained, however, in the work carried on in 1919, by the use of sodium hydroxide and sodium sulphide, and the strongest paper in which sodium salts were used was thus obtained. Tow from Mr. Merrill's machine was used. When the work was taken up in 1922, cooks were made of commercial tow under similar cooking conditions. The paper obtained, however, did not approach the other in strength, and the difference was ascribed to the poorer quality of the tow and unsatisfactory beater treatment. Equal or better results might have been secured if sufficient pulp had been made for working out the extremely difficult problem of proper beating. It was deemed advisable at that time, however, to try out other chemicals.

Type of Tow Used

In the trials of the various chemicals discussed hereafter commercial tow, sold either as fine or medium, was used. In most cases it was dusted before using and chopped into pieces about two inches long by running through a rag cutter. Various degrees of thoroughness were tried in the dusting and cutting operation; by reference to Table 2 it can be observed to what extent any particular cook has been so treated.

Caustic Soda, Sodium Sulphide, and Calcium Hydroxide

In the caustic soda and caustic soda and sodium sulphide cooks the pulps had a tendency to be slimy and to hydrate very easily during beating. In order to overcome this difficulty a series of cooks was run with lime added to the other chemicals, the supposition being that the lime would harden the fiber and prevent the tendency to slime. It was found, however, that whenever the fiber was hardened the shive was equally hardened and that when the cooking conditions were sufficiently drastic to disintegrate the shive the fiber was no better than could be obtained without lime. Nevertheless in cook No. 46, cooked as shown in Table 2, quite satisfactory results were obtained.

Caustic Soda and Sulphur

When a solution of caustic soda is boiled and small amounts of sulphur are added the reaction represented by the following equation takes place:

$$6\ NaOH + 4S = Na_2SO_3 + 2Na_2S + 3H_2O.$$

However, when wood is cooked in a solution containing sodium thiosulphate and sodium hydroxide in the proportion of one mole of the former to two moles of the latter, the cooking action of one mole of sodium sulphide is obtained. From these two observations it may be expected that eight moles of caustic soda and four moles of sulphur will produce, when combined, the cooking action of three moles of sodium sulphide. In paper mills accustomed to using rags there would not exist equipment for the recovery of alkali, and the use of sodium sulphide as ordinarily employed in the sulphate process would consequently be out of the question. By using caustic soda and sulphur, however, this difficulty may be overcome, and a series of cooks was accordingly carried through to indicate how the idea would work out. Various proportions were tried and the best results were obtained with 27 pounds of sodium hydroxide and 4 pounds of sulphur to 100 pounds of medium tow under the conditions shown opposite cooks 61 and 62 (Table 2). More of the chemical, higher temperatures, or longer time weakened the bast too much, while less chemical, lower temperatures, or shorter time did not sufficiently reduce the shive. Indications are, however, that by prolonging the time to 18 or 20 hours some improvement might be made by cooking at a lower temperature between 155 and 160° C. The samples of paper which were made in paper machine runs Nos. 2 and 3 from pulps out of cooks 61 and 62 are very satisfactory sheets. Although they are among the strongest made in the experiments, a great deal of work along the line of beating studies must be carried out before a sheet equal to currency paper in toughness can be expected.

Sodium Hydroxide, Sodium Sulphide, and Sodium Sulphite

The chemical properties of sodium sulphite would indicate that it might dissolve certain of the ligneous and other non-cellulose constituents of the flax with very little action on the bast, and that its reducing nature in much the same manner as sodium sulphite, might tend to prevent a certain amount of oxidation and tendering

[5] Attention is directed to work along similar lines carried on at the Bureau of Standards in 1922 and 1923 and reported in an article in the Paper Trade Journal, August 2, 1923, page 143, by Kellogg, Shaw and Bicking entitled, "Seed Flax as a Paper-making Material."

of the fiber by the elevated temperatures and caustic soda employed. A great many combinations were tried, and in cook 100 (Table 2) a pulp was obtained which yielded the strongest paper made in these experiments. The appearance and color of the sheet, however, was poor, and a few unreduced shives are apparent. Further cooking work with these three chemicals—NaOH,Na_2S, and Na_2SO_3—intensive beating experiments on the resulting pulps are advisable.

Sodium Sulphite

The action of sodium sulphite in conjunction with active alkalies as in the foregoing, suggests the use of sodium sulphite alone. A number of cooks were made accordingly, but the pulps did not lend themselves to treatment in the manufacture of bank note. Some excellent glassine paper was obtained, however. A study of results would discourage the use of sodium sulphite alone. It seems advisable, however, to study the benefits of a digestion with sodium sulphite with subsequent digestions with sodium hydroxide and sodium sulphite.

Sodium Sulphite and Chlorine

The Cross and Bevan method for the determination of cellulose suggests the use of alternate treatments with sodium sulphite and chlorine. A number of cooks were made and very white pulps of excellent appearance resulted. When beaten for running over the paper machine, however, the fiber disintegrated to a considerable extent. A sample of paper from cook 119 illustrates the character of product. Papers of satisfactory appearance and feel were obtained, but the results of the strength tests were all very unsatisfactory. The complexity of the method, together wih the character of the results, would discourage further work. It is believed, however, that the use of chlorine water is worthy of further consideration as one stage in bleaching the pulps obtained by various methods.

Bleaching Tests

A large number of bleaching tests were made by the following methods: Bleaching in one step with calcium hypochlorite; in two steps with the same agent and washing with water after each; the same with preliminary treatments with dilute sulphuric acid; and the preliminary sulphuric acid treatments followed by bleaching with a solution likewise rendered acid. Multi-stage bleaching with intermediate washing showed decided advantages, and the use of sulphuric acid assisted in obtaining a bright white. The very careful use of acid in a preliminary wash and in the first bleaching stage seemed to give good results with the least loss in fiber strength, and for that reason chlorine water instead of calcium hypochlorite is recommended for these steps. The tests made with chlorine water on pulps cooked with sodium sulphite indicated that the shive was very effectively broken down, and the slimy feel characteristic of flax pulps considerably reduced.

Cooking Tests on Linen Rags

The work in the foregoing account failed to yield paper of the desired strength and uncertainty existed as to whether the reason therefor was on account of the weakness of the pulps obtained or because of faulty methods or equipment in paper making. A number of cooks and paper making runs were consequently made with linen rag material in order to ascertain results with the laboratory equipment and to compare them with commercial performance. Lime cooks made under the same condjtions as are used in the mills were found to produce paper of excellent strength and quality. Sodium hydroxide used in amounts up to 5.78 pounds with 1.06 pounds of sulphur per 100 pounds of rags appeared not to weaken the fiber. Sodium sulphite in the amount of 20 per cent gave a pulp that bleached very easily and a paper of good tensile strength but with less than half the folding resistance of that from the other runs mentioned. These facts indicate that sodium hydroxide and sulphur give by far the best results, and also that when conditions are properly maintained the equipment on hand will produce papers with strength equal to that obtained with commercial machines.

Summary of Investigation on Tow

The investigations on flax tow thus far would indicate that it is very difficult if not impossible so to treat the material with chemicals and elevated temperatures as to disintegrate the woody matter and leave the bast fiber with its original strength unimpaired. Mild treatments may be given, however, sufficient to disintegrate the shive to such degree that it may be washed out by mechanical means, leaving the best fiber with sufficient strength to make the higher grades of writing paper.

The beating of the fiber is very important; indeed it seems probable that after the best beater treatment is discovered a paper comparable with bank notes may be obtained from pulps cooked under some of the conditions already studied.

Although excessive towing will reduce the amount of shive to about forty per cent, the loss of bast is so great that to produce a tow containing less than fifty per cent of shive is considered uneconomical.

Of the digester treatments tried, those with sodium hydroxide, sodium hydroxide and sodium sulphide, sodium hydroxide and sulphur, and sodium hydroxide, sodium sulphide and sodium sulphite seem worthy of further study.

The use of multi-stage bleaching with chlorine water in the first stage and calcium hypochlorite in the last is recommended, and further study will be given the subject.

Products from the Whole Straw and from Towing Waste

As the foregoing discussion would indicate, the main lines of endeavor to date have been the working out of the manufacture of

TABLE 2

Cook No.		46	61 & 62		100	118	119	154	158
Material Used		Medium tow cut twice	Medium tow cut twice		Medium tow cut twice	Medium tow cut twice dusted	Medium tow cut twice dusted	Straw dusted	Straw dusted
Preliminary Treatment									
Chemicals Used Per 100 Pounds Material:									
NaOH	Pounds	14.1	22	.....	0.9	.....	.....	17.6	17.6
Na_2	Pounds	5.5	4	.....	13.3	.....	.....	4.4	4.4
S	Pounds	.....	.....	.....	.....	.....	.....	.....	.....
Na_2SO_3	Pounds	.....	.....	.....	21.5	17.0	17.0	.....	.....
CaOH	Pounds	5.3	.....	.....	.....	.....	.....	.....	.....
Volume of cooking liquor	Gallons	60	60	.....	100	.....	.....	50	50
Maximum temperature	C.	148	166	.....	166	158	158	160	160
Time to maximum temperature	Hours	12	2	.....	2	2.5	2.5	2	2
Time at maximum temperature	Hours	11.5	6	.....	3.25	17.5	17.5	8	8
Yield of unbleached pulp	Per cent	51.4	42	.....	42	59	59	49	39
Bleach required	Per cent	.....	.....	.....	45	12	.....	10	12.5
Paper tests:									
Weight per ream 24 x 36–500	Pounds	38	54.7	51.0	52	53	50	34	20
Thickness	Inches	.0031	.0045	.0045	.0033	.0033	.0040	.0026	.0020
Strength factor	Points per lb. per ream	.87	.70	.69	.77	.82	.59	.74	.79
Average breaking length	Meters	6545	6565	7295	5760	2052	6920	5238	6013
Average folding test	double folds	369	695	613	2013	905	42	155	85
Average tearing test	Per cent	58	53	55	76	37	43	19	31
Stretch	Grams	4.1	5.21	5.33	5.7	4.2	2.4	1.7	3.5

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bank note paper from flax tow. Requirements for this paper are the very highest. The quality of the pulps was judged by their yield, freedom from shive, and bleaching properties. The papers obtained were judged for color, formation, freedom from shive, apparent hydration of the sheet, and by the various strength tests enumerated in Table 2. The use of the towed fiber for the manufacture of cheaper papers was not given much consideration for the reason that the cost of tow is too great to consider its use in the manufacture of paper where wood pulp or cotton rags are entirely satisfactory. The cost of such material would be prohibitive in the manufacture of any paper selling for less than twenty-five cents per pound at the mill—unless uses for the towing and washing waste can be found.

In view of the limitations mentioned above, therefore, considerable effort has been devoted to the development of products in which the whole straw is pulped and the entire product used. Studies have also been carried on to ascertain to what extent the towing waste itself could be used in paper manufacture.

Paper from the Whole Straw

Two or three cooks of flax straw by the acid sulphite process were made in 1920 with very unpromising results. It thus appeared that more progress could be made by confining this phase of the work to alkaline or neutral cooking, and the sulphite process was accordingly dropped.

Among the papers or products in which pulps prepared from the whole straw might be used are the following:

Counter board.
Press board.
Test board.
Insulating paper (electrical).
Condenser paper (electrical).
Tissue.
Grease-proof paper.
Hard fiber.

It is obvious that with the time and resources available only a few of these used can be taken up for study. Previous work by the Bureau of Plant Industry on the utilization of flax straw in the first three types of products was attended with considerable success.

In cooking the straw for the manufacture of grease-proof or tissue paper most of the combinations tried with tow were used, and the combination of sodium hydroxide and sodium sulphite seems to be the best. The following conditions gave excellent results:

Chemical used per 100 pounds of straw (oven dry basis)—
NaOH, 17.6 pounds.
Na_2S, 4.4 pounds.
Volume of cooking liquor per 100 pounds straw, 50 gallons.
Time to pressure, 2 hours.
Time at pressure, 8 hours.
Temperature at pressure, 160° C.
Yields of pulp obtained, 45 per cent.

The pulps obtained were bleached to a light cream color by the used of 10 per cent of standard bleaching powder. They were beaten three hours and ten minutes. The control of the beating was found to be exceedingly important, and further work is contemplated. The strength of the sheets obtained is very encouraging, and this in connection with yields comparable with wood gives hope that flax may find considerable use in paper products.

Experiments on Towing Waste[6]

The experiments to determine the pulping properties of the actual towing waste were divided into two groups—the first to ascertain the yield and quality of bleachable pulp suitable for book and similar papers, and the second to ascertain what yields and quality of unbleached pulps might be obtained, suitable for the manufacture of test board.

[6] "Pulping of flax tow waste by the sulphate process" (reports in Forest Products Laboratory files) by S. T. Feng and C. L. Shao.

The results of the first group of tests indicate that satisfactory pulp requiring 15 per cent of bleaching powder can be obtained by the use of 20 per cent of sodium hydroxide and 15 per cent of sodium sulphide, with yields ranging between 25 and 30 per cent. It was evident that under such conditions the production of bleached pulp from towing waste at a profit was impossible, and further work on this phase of the investigation was discontinued.

The second group of tests was made in order to ascertain the feasibility of producing an unbleached pulp from towing waste for the manufacture of test board. In the work on tow indications were that the slimy characteristic of the pulps was due to products coming from the cortex, the cambium layer, and the woody center. By less drastic cooking of the waste a larger and more useful yield of these materials would be obtained, and it was with this object that a number of cooks were made with various combinations and amounts of sodium hydroxide and sodium sulphide. The maximum yields of pulp with a product soft enough to reduce in the beater to a condition suitable for paper making were 62.3 per cent, by use of 10 per cent sodium hydroxide, 4 per cent sodium sulphide, a cooking period of eight hours, and a maximum temperature of 148° C.

Experiments were conducted in which various amounts of the pulp were mixed with a half-cooked sulphate pulp from jack pine and paper was made of the product which gave the following strength tests:

Per cent of pulp from flax waste	Per cent of jack pine pulp	Bursting strength. Points per pounds per ream
10	90	.155
25	75	.231
50	50	.291
75	25	.313
90	10	.272
100	0	.165

Study of the table will show how the proper blending of the pulp from flax waste with a crude long-fibered stock such as sulphite or sulphate screenings will give a stronger product than can be obtained from either alone.

Another series was run using commercial kraft pulp from jack pine to the extent of 25 per cent, with 75 per cent of towing waste pulp and the time of beating varied. The paper developed the following strength values:

Time of beating. Hours	Bursting strength. Points per pound per ream
½	.543
1½	.636
2½	.680
3½	.867
4	.758

The results indicate the possibility of utilizing towing waste pulp as a component of such products as test boards, where its cementing properties may be used to advantage with other types of coarse paper stock. In localities where an outlet for the board exists it is probable that the value of the pulp obtained from the tow waste would considerably assist in lowering the cost of manufacturing the better pulps from the tow.

General Summary

In the preparation of flax tow for paper making purposes it is impracticable to remove by machinery now available more than 75 per cent of the woody matter of the flax stem, on account of the excessive loss of bast after a grade known in the trade as "fine tow" has been obtained.

It seems impossible to prepare pulp of sufficient strength by digestion with chemical solutions for the manufacture of bank note directly from flax straw.

In the manufacture of pulp suitable for bank note it seems necessary to remove as much shive or woody matter as possible by mechanical means and to digest by suitable chemicals under proper conditions the fine tow thus obtained. The pulps resulting must be thoroughly washed to remove the spent lyes and also the ultimate cells of the shive separated by the cooking action. Very

careful control of the beating is necessary, even with the best pulps, to produce satisfactory paper. Mixtures of sodium hydroxide with sulphur or sodium sulphide, with or without sodium sulphite, gave the best results. The best application of these reagents seems worthy of further study, together with the question of proper beater treatment, which needs exhaustive investigation.

Pulping tests on the flax straw without preliminary towing indicate that it is possible to obtain yields of pulp of between 40 and 50 per cent, suitable for the manufacture of greaseproof paper, tissue, and similar products where the properties peculiar to flax serve to advantage.

Pulping tests on towing waste indicate the feasibility of getting satisfactory yields of pulp suitable for the manufacture of test board in combination with coarse long-fibered stock, such as sulphite or sulphate screenings. The production of tow for the manufacture of bank note and other high-priced papers together with the utilization of the towing waste for crude products offers possibilities for the economic utilization of considerable quantities of flax straw now wasted.

The utilization of flax straw by the paper industry can best be accomplished by introducing its use in specialties where it has the greatest inherent advantages and, as the co-operation of farmers is secured, by the gradual extension of its use to other suitable products, until a considerable consumption is attained.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

CLARENCE J. WEST, Chairman

Raw Materials—Other Than Wood

New Method of Making Straw Paper. .Ger. pat. *Svensk Trävarutid.* Feb. 29, 1924. A German firm has just received a patent for a new process for the manufacture of straw paper and boards, in which no chemicals of any kind are used. From tests made at the Material prüfungsanstalt at Berlin it appears that paper and boards are made, partly from corn straw, partly from reeds without the addition of chemicals. The results of the tests of paper give the following figures: Average breaking length of the straw paper, 5,200 m.; of the reed paper, 2,850 m.; elasticity, 4.5% and 2.1% respectively; folding strength 112 and 9; yield per ton of raw material, 51.3% and 55.4%. A French mill is turning out paper by this process and should the expectations be fulfilled it means much for the agriculture of Sweden and a better return on farming. —P. B.

Textile Fibers and Pulp from Raw Material as Jute, Reeds, Etc. Carl Alfred Braun. Ger. pat. 388,998. *Papierfabr.* 22, No. 74 (Feb. 24, 1924). The comminuted fibrous raw material, as jute, typha, reeds, etc., is extracted with hot water at a temperature not exceeding 110° C., and then is treated with a cooking liquor under pressure up to 176° C. The liquor consists of a solution of an alkali carbonate and a neutral sulphite, to which is added a small amount of caustic alkali. The proportions are indicated in the following example: 25 kg. Na_2SO_3, 15 kg. Na_2CO_3, and 3 kg. NaOH in 600 l. of water.—J. L. P.

Straw and Reeds as Raw Material for Paper. A. Klein. *Wochbl. Papierfabr.* 55, 524 (March 8, 1924). An unpurified rye straw was converted without chemicals to a sheet of paper, which tested as follows: breaking length 5,200 m., stretch 4.5% and folding endurance 112. The breaking length is about equal to that of sulphite papers. Reeds (*Phagmites communis*) were converted into a white paper by bleaching, and the following tests indicated that it was comparable to a rag paper. Breaking length, 8,250 m.; stretch 4.7%; folding endurance, 2,034. The method of preparing these papers is withheld for the present.—J. L. P.

Apparatus and Process for Treating Grasses, Etc. H. E. Ellis. U. S. pat. 1,465,579, Aug. 21, 1923. The material is first put through a shredder and crusher where it is shredded and cut into short lengths, passed through a separator to eliminate dust and foreign material, and discharged into a beater through a hopper which automatically weighs it. A suitable chemical solution (preferably lime or soda ash) is added and the material is circulated with the roll raised and at the same time heated by means of steam coils. The material is dumped into a stuff chest, pumped into a second beater, and beaten with the roll down, a stone bedplate being used. From the second beater the stuff goes to a second chest, from which it may be sent to another beater for further treatment if necessary, or else to a decker for dehydration and from there either to a bleacher or to a washer.—A. P.-C.

Papermaking Fibers. Bertrand S. Summers. *Paper Trade J.* 78, No. 21, 50-54 (May 22, 1924). A discussion of the more prominent papermaking fibers as related to the mode of production of pulp from them, and their action in the beater or hollander.—A. P.-C.

Raw Materials for Paper. Arthur S. Klein. *Paper* 34, No. 5, 194-195 (May 22, 1924). A discussion of the necessity for turning to reeds and grasses owing to imminent depletion of forest resources. V. Willemoes d'Obry has invented a process whereby papyrus or reed (*Phragmites communis*) is reduced to halfstuff containing about 70% of cellulose by the action of a simple machine and of cold water. The halfstuff can be converted into a paper equal to A-1 bond or ledger paper made of 100% best rags.—A. P.-C.

Recovering Paper Stock from Town Refuse. F. W. Golby. Eng. pat. 209,648, Apr. 3, 1923. In the recovery of paper stock from town refuse the refuse is fed by a belt conveyor to a chute where it is sprinkled with water and falls into a perforated drum rotating in a tank. The paper, cardboard, etc., is pulped and passes through the perforations, and the pulp so produced overflows into a separate tank and may be used to form sheets saleable to paper makers. Pegs within the drum pick up rags, etc., and drop them further along the cylinder, thus preventing clogging of the drums.—A. P.-C.

Paper Pulp from Peat. A. Koch and Runkel. Eng. pat. 213,447. The fibers are saturated with water, subjected to heat or cold so as to make them susceptible to chemical action for removal of colloid constituents and finally treated alternately with alkaline and with chlorinating solutions.—A. P.-C.

Process for Producing Paper Stock Containing the Necessary Sizing Substances. Hydrophyt-Zellstoff, G.m.b.H. Ger. pat. 388,778. *Papierfabr.* 22, No. 74 (Feb. 24, 1924). The upper and underground parts of hydrophytes, as reeds and rushes, are mixed in a mechanical way by grinding or in an edge mill for the production of paper stock. Such stock contains natural sizing substances.—J. L. P.

Miscellaneous

Antifriction Bearings in Papermaking Machinery. R. H. DeMott. *Pulp & Paper* 22, 305-309 (Mar. 13, 1924). An outline of the development of the use of ball bearings for the various rolls of the paper machine, showing what has been done in the past and what is being done at present.—A. P.-C.

Definitions of Paper Terms. F. A. Curtis and C. J. West. *Paper Trade* J. 78, No. 3, 51-54 (Jan. 17, 1924); No. 4, 50-52; No. 5, 54-57; No. 6, 56-58; No. 7, 60-62; No. 8, 50-52; No. 9.

51-54; No. 10, 59-62 (March 6, 1924). A list of definitions including basic paper terms; various commercial papers, the names of which have in most instances grown out of special uses to which the papers have been put; various converted articles which are made from paper; standard sizes of paper; special finishes of paper; miscellaneous paper terms.—A. P.-C.

Babbitt Metals and How to Babbitt Bearings. E. Andrews. *Power; Paper Trade J.* 78, No. 10, 57-58 (March 6, 1924). A discussion of the properties of babbitts, with directions for the proper lining of bearings.—A. P.-C.

Abstracts of the Pulp and Paper Literature, Chemical Part. Graap. *Zellstoff U. Papier* 4, 4-7 (Jan., 1924). Brief abstracts of articles in the German journals pertaining to pulp and paper are given. The period covered is July-September, 1923.—J. L. P.

Letters of a Paper Maker to His Son. Anon. *Wochbl. Papier-Fabr.* 55, 283-285 (Feb. 9, 1924). The fifth letter of this series deals in a general way with power consumption in a paper mill making rag papers.—J. L. P.

Use of Ultra-Violet Light for Deciphering Damaged Documents. Fonzes-Diacon, Faucon and Reynaud. *Ann. Fals.* 17, 20-23 (Jan., 1924). Chemical and photographic methods and X-rays were used without success to try to decipher a will which had remained some time in contact with 36° B. caustic soda. Heating for several hours at 110° to 120° C. brought out the writing to a slight extent, but not sufficiently to allow it to be read with certainty. On exposing the paper to the action of a 220 volt mercury vapor lamp provided with a Wood screen which filtered out all wave-lengths except those in the neighborhood of 3650 angstroms, the writing became quite fluorescent and could easily be read but not photographed.—A. P.-C.

Review of the Paper Industry. Anon. *Papir-Journalen*, No. 1, 1923. The scarcity of paper that marked the war years has been followed by over-production. The remedy, successfully applied in Norway, was the restriction of output, whereby stocks were reduced one-third. Production also fell off, and consequently exports, especially of wood pulp, which declined from 243,000 tons in 1915 to 181,630 tons in 1922. The price of kraft and news print dropped from 1,200 crowns per ton in 1921 to 560 crowns in December, 1922, and 425 crowns in February, 1923. On the Christiania stock exchange mill securities were generally lower, in most cases selling below the quotations of 1921.—P. B.

Standardization of Paper. Anon. *Papir-Journalen*, Feb. 10, 1923. A summary is given of a lecture by the Swedish engineer, Amos Kruse, who makes a strong plea for standard sizes or formats of paper. It is claimed that great economies could be effected. In Sweden, for example, institutions could save between 30 and 40% on their purchases of paper. American experts estimate that, in consequence of the neglect of standardization, the public spends 100 million dollars annually more than is necessary. The statement is made that, of the 1,000 grades of paper manufactured in the United States, about 50% are superfluous.—P. B.

Underfeed Mechanical Stokers in the Paper Industry. Edward B. Cowles. *Paper Trade J.* 78, No. 8, 48-49 (Feb. 21, 1924). A brief discussion of their merits.—A. P.-C.

Fuel Economy by the Use of More Efficient Methods in the Production of Steam. David Brownlie. *Papier* 26, 1285-1288 (Nov., 1923); 1411-1414 (Dec., 1923); 27, 49-52 (Jan., 1924). A discussion of the causes of low boiler efficiency, covering poor equipment and lack of scientific control.—A. P.-C.

Cost of Boiler Feed Water. James T. Beard, 2nd. *Paper* 33, No. 16, 5-7 (Feb. 7, 1924). A discussion of the troubles and expense caused by impurities in boiler feed water, and of the advantages and savings which can be effected by a well designed and properly operated purifying system (either softening plant or boiler compound).—A. P.-C.

Waste in the Pulp and Paper Industry. B. T. McBain. *Paper Ind.* 5, 1708-1709 (Feb., 1924). Outline of the causes of waste in the wood room, covering barking, chipping, screening, culling, scaling, heating the wood room, etc.—A. P.-C.

Apparatus for Recovery of Volatile Solvents Used in Treating Paper. Emil Passburg. Ger. pat. 388,105. *Papierfabr.* 22, Tech. Wiss. Teil, 60-61 (Feb. 17, 1924). Alcohol, benzine, ether, and similar solvents, used in the treatment of paper, are recovered by drying the sheet in an air-tight container which is provided with an air pump and a surface condenser.—J. L. P.

Boards

Decay of Pulp Board and Its Causes. Anon. *Papierfabr.* 22, Tech.-Wiss Teil, 56-58 (Feb. 17, 1924). A general article on the causes of pulp board decay.—J. L. P.

Fiber Board From Bagasse. J. K. Shaw. U. S. pat. 1,457,285, May 29, 1923. Same as Can. pats. 212,129 and 212,130, May 31, 1921. See *Pulp & Paper* 20, 680, Aug. 10, 1922; *Paper Trade J.* 74, No. 14, 51, Apr. 6, 1922.—A. P.-C.

Process of Manufacturing Wall Board. H. F. Weiss assignor to C. F. Burgess Laboratories. U. S. pat. 1,461,337, July 10, 1923. The fibrous material and binder are preferably mixed in a shredder which pulverizes the binder (pitch or asphalt) and shreds the dry fibrous material (shavings, sawdust, chips, cork, pulp or screenings), screened, and then sifted on to a travelling wire fabric to form a layer of desired thickness, pressed between rolls, passed through a hot chamber at a temperature to soften the binder without melting it or injuring the fiber (about 250° F.), pressed to the desired thickness, lined with kraft paper if desired, and finally cut to the required dimensions. Indentations or pockets may be pressed in one or both surfaces of the board, if desired, thus making it lighter in proportion to its thickness and improving its heat insulating properties when it is lined.—A. P.-C.

Roll for the Manufacture of Corrugated Board. A. Beran. U. S. pat. 1,450,351, Apr. 3, 1923. The roll is built up of a large number of thin metal disks with suitably shaped teeth, with a keyway which is in the same position in all disks. The shaft of the roll has a wide groove, in which fits a wavy key, the shape of which depends on the shape of the corrugations required. On assembling the roll, the disks are displaced, relatively to one another, and thus form corrugations corresponding to the shape of the key. The key is replaceable, so that different shapes of corrugations can be obtained with the same disks but another key.—A. P.-C.

Fiber Board and Process of Producing it. M. Chew. U. S. pats. 1,423,081, 1,423,082, 1,423,083, July 18, 1922.—*No. 1,423,081* covers a board prepared from "chip waste" from saw mills; *No. 1,423,082* covers the apparatus; and *No. 1,423,083* covers the process. The material is immersed in water containing ground talc and soda ash, or powdered asbestos, and steamed for 10 to 24 hours, water is added to the mass which is fed to one or more beaters (preferably ball mills or Clafflins) screened (the screenings being refined in a ball mill), mixed with suitable hair or fiber (horsehair, asbestos, flax, hemp, etc.), partially dewatered, diluted again, passed through a sand trap, made into boards of suitable size which are pressed (in a hydraulic press), dried, and treated with a waterproofing liquid or composition.—A. P.-C.

Process of Making Wall Board. O. L. Routt. U. S. pat. 1,459,264, June 19, 1923. The dry liners are sprinkled with dry powdered plaster of Paris and applied to the damp filler or core, and the moisture of the latter wets the plaster which sets, making an excellent adhesive, while the pressure of the rolls ensures a smooth surface. One of the liners is given two upturned folds, one near each edge, to form a smooth edge for the finished board, after trimming off the excess of liner.—A. P.-C.

Fibrous Wall Board and Process of Producing It. J. H. Caffrey. U. S. pat. 1,447,708, March 6, 1923. The board is made

of flax straw or other long fibered material, exclusive of wood pulp or waste paper stock. It is fed through rollers which apply a coating of a liquid, transparent, cementing material, which waterproofs it and renders it fire resistant. It is next passed through a perforating device, whereby holes are punched at regular intervals over its surface by means of suitably shaped spikes which crowd the displaced fibers so as to reinforce the edges of the holes, from which it is passed through a press to smooth out the surface; and finally it is cut to size. The purpose of the holes is especially to give better anchorage for any plastic coating (e.g., plaster), which may be subsequently applied to the finished board.—A. P.-C.

Waterproof Paper Board. A. L. Clapp. U. S. pat. 1,468,959, Sept. 25, 1923. Montan wax is beaten into a pulpy mass of cellulose fibers containing finely divided slacked lime and a precipitating agent such as alum is added. The material is formed into sheets which have an exterior layer of waterproofing material not exceeding 0.002 to 0.003 in. in thickness.—A. P.-C.

Cellulose

Camposition of Pine Wood. E. Hägglund and E. Grenqvist, Mitt. No. 1 Holzchem. Inst. Abo, Sept. 1922. Different methods employed in the investigation of pine wood are criticized and preference is given to that of Klason (Svensk Kem. Tidskr. 33, 150 (1921.) If the hydrogenion of the sulphite solution be properly adjusted, the cellulose molecule is not attacked. The hemicellulose, however, is decomposed. When an acid mixture composed of 80 grams of sodium bisulphite and 200 cc. of tenth normal hydrochloric acid made up to a liter with water is used, cellulose and dextrose are scarcely attacked, but the pentoses are readily decomposed. If instead of 200 cc. acid, 500 cc. is substituted in the above mixture, it acts more strongly and the digestion liquor contains 2.94 per cent of the cellulose as sugar. After heating for four days at 100 degrees with the stronger of the above mixtures, only 20 per cent of the dextrose is decomposed, whereas arabinose under the same conditions is decomposed to the extent of 93 to 96 per cent. A method is suggested for estimating accurately the relative amounts of cellulose and hemicellulose and the lignin by difference.—C. J. W.

Viscose Reactions. B. Rassow and M. Wadewitz. J. Prakt. Chem. 106, 266-332 (1923). The authors have studied in detail a number of the steps in the preparation of viscose solutions, particularly the formation of alkali cellulose, its ageing and conversion into viscose. There apepars to be a definite compound formed by the action of sodium hydroxide on viscose, having the empirical formula $C_6H_{10}O_5.NaOH$. When cellulose is treated with 18 to 20 per cent sodium hydroxide solution and the excess of sodium hydroxide pressed out, the remainder of the free alkali can be washed out with absolute alcohol. A stage is eventually reached when further washing with alcohol removes alkali at a slow, constant rate due to alcoholysis of the above compound. Eventually the whole of the alkali can be removed by alcohol, leaving regenerated cellulose. Experiments using sodium hydroxide solutions of different strengths, 10 to 40 per cent, indicate an equilibrium between cellulose, alkali, the compound and water, With 35 per cent alkali, conversion into the compound $C_6H_{10}O_5.NaOH$, is practically complete. The compound is not formed by the action of sodium ethoxide in alcoholic solution on cellulose nor by the action of sodium on cellulose. The ageing of alkali cellulose does not take place until the excess of sodium hydroxide solution has been pressed out. A remarkable property of cellulose regenerated from aged alkali-cellulose is that it gives a nitro-cellulose which is completely soluble in a mixture of ether and alcohol. A large number of viscosity measurements were made to determine the effect of different factors on this property of viscose solutions. A complete abstract may be found in Chem. Abstracts 18, 1568 or in J. Soc. Chm. Ind. 43, 289B. —C. J. W.

Scientific Study of Cellulose. Arthur S. Klein. Paper 34, No. 5, 191 (May 22, 1924). A brief discussion of differences of various celluloses, indicating that the explanation is probably to be found in physical and physico-chemical phenomena.—A. P.-C.

Riddle of Cellulose. Thomas J. Keenan. Paper 33, No. 19, 8, 20 (Feb. 28, 1924); *World's Paper Trade Rev.* 81, 1456, 1458 (May 2, 1924). A brief outline of some recent work on the constitution of the cellulose molecule.—A. P.-C.

Constitution of the Polysaccharides. VII. Esparto Cellulose. J. C. Irvine and E. L. Hirst. J. Chem. Soc. 125, 15-25 (1924). Dry, bleached, esparto cellulose is a mixture, probably in the form of a solid solution, of 18.5% of pentosan and 81.5% of hexose cellulose. The pentosan can be completely extracted with boiling 12% sodium hydroxide, and was identified as axylan. The hexose portion is identical with cotton cellulose. The original esparto cellulose is more resistant to acetylation than cotton cellulose. The acetate can be prepared by incorporating the material with glacial acetic acid containing a small proportion of chlorine, adding acetic anhydride, and then passing a small quantity of sulphur dioxide through the mixture. Complete solution is obtained by stirring for 24 hours. The acetate is softer and were sensitive to high temperatures than that from cotton cellulose, but the latter property is largely influenced by the completeness with which acidity has been removed by washing.—A. P.-C.

Determination of Copper Number of Cellulose Materials. Application of the Fontes-Thivolle molybdomanganimetric method. H. Gault and B. C. Mukerji. Compt. Rend. 178, 711-713 (1924). About 1 gram of the cellulose is added to 50 cc. of Fehling's solution diluted with 100 cc. of water and previously heated at 120° (calcium chloride bath). Heating is continued for exactly 15 minutes, the mixture filtered and the cuprous oxide obtained dissolved directly or first reduced to copper and then dissolved in the phosphomolybdic reagent and determined by permanganate titration.—C. J. W.

Chemical Analysis of Cotton. Determination of copper number. D. A. Glibbens and A. Geake. J. Textile Inst. 15, 27-38T (1924). The Schwalbe, Hägglund and Knecht and Thomson methods for the determination of the copper number of cellulose were critically investigated and compared. The Knecht and Thomson method is the most accurate and rapid of the three, but is subject to error, since Fehling's solution suffers autooxidation and the performance of strictly comparable blanks is therefore necessary. The Braidy method (Rev. Gen. Mat. Col., 25, 35 (1921)) has therefore been examined and adapted so that it gives results more accurate than the methods employed hitherto. The method is carried out as follows: 2.5 grams of the sample of cotton, contained in a conical flask only very slightly greater than 100 cc. in capacity, are covered with 5cc. of a solution containing 100 grams of copper sulphate per liter and 95 cc. of a solution containing 50 grams of sodium bicarbonate and 350 grams of crystalline sodium carbonate per liter and the flask is immersed in a rapidly boiling water bath for 3 hours. The contents of the flask are then filtered with suction, the cotton, impregnated with cuprous oxide, being washed first with dilute sodium carbonate solution and then with hot water. Subsequently, the cuprous oxide is dissolved by treating the cotton on the filter with 15 cc. and 10 cc. portions of a solution containing 100 grams iron alum and 140 cc. concentrated sulphuric acid per liter, the cotton being then washed with 2 N sulphuric acid and the combined filtrates and washing titrated with N/25 potassium permanganate solution. A temperature alteration of 1.5°, such as may arise from fluctuations in atmospheric pressure, causes a 5 to 10% variation in the copper number, and this is also affected by the quantity of cellulose employed in the determination. This method, however, gives a very low and constant blank (0.01) and thus allows the detection of celluloses which have suffered but very slight degradation. The copper numbers determined on several samples of cotton are given.—C. J. W.

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THE INDUSTRIAL EXECUTIVE*

By B. A. Franklin, Vice-President Strathmore Paper Co., and Ex-President, Cost Association of the Paper Industry.

The United States of America has become predominantly an industrial country. Still great agriculturally, it has, nevertheless, traveled steadily and rapidly ahead on the industrial road until it has reached even greater industrial development. Its people flock to the cities and to the factories in those cities. The hours of work are shorter than on the farm; the financial returns appear larger; and a wider career, or at least a more interesting and varied experience opens out before the factory worker. These are sufficient constantly to recruit his ranks.

As this process goes on—as the workers flock to the factories—the general standard of living advances to constantly higher levels, and this demands more and more manufactured articles. At the same time the ownership of industry and the interest in it become more and more widely distributed, and the population becomes more and more dependent upon industrial prosperity. And science, invention, the mechancial developments of the last quarter century, the anticipation of greater ones in the years to come, all join in a promise of even greater industrial development than has thus far been seen. How far shall industry go and how best shall the balance between agriculture and industry be maintained. Perhaps the operation of the law of supply and demand, pretty sure but sometimes painful in its processes, may determine. Or the urge of the particular kind of civilization America builds may settle the matter. Certainly the question—though one of the major questions facing the country today—is one that cannot be easily answered Industry in its own defense may be called upon to help work out a solution of the problem and apply the corrective remedies.

Movement Toward Co-operation

There is a movement, started in Massachusetts by industry, to improve the farm product output through the aid of expert advisers in crop and animal raising and in boy and girl encouragement. This movement, if spread, will add to and aid very materially the fundamental wealth of the country. It is a basic addition to the far-seeing idea of co-operation of industry and agriculture.

The tremendous expansion of industry is bringing to greater and greater prominence and importance the profession of industrial executiveship or management, and the qualities, knowledge, and operating abilities of those who practice it.

In the earlier stages of industrial development there were but two clearly defined classes—capitalists and laborers—capital taking to itself, largely direct management. At the present time industry is rapidly developing three classes—the capitalist, the manager and the laborer. The future success of industry will unquestionably depend very much on the middle class—on those who constitute the management group.

Spread of Capital Control

Capital is including a more widely diffused group, embracing management, and indeed, in increasing proportion, labor itself. There is being developed a democratization of capital which promises to be the best and only practical solution of the old struggle between capital and labor. Stock ownership in our industries is becoming more widely spread as wealth in America increases, and is seeping down to all those who are willing to exercise thrift. Labor itself, as an organized group, is undertaking the role of capital. Capital is becoming a group proposition in which anyone may be a member.

This movement encouraged by management, initiated here and there in individual units by far-seeing capital, bodies well for industry if properly developed, for no one is so jealous for the welfare of the industrial unit as ownership, or permits so grudging conditions which lead to high cost and low production.

There are those who speak slightingly of the capitalistic system as if it were a scheme foisted and forced upon the world by the shrewdness and ability of the few. It is however, the natural outcome of the development of industry, is essentially right in principle for successful progress, and if it has a bad name it is because those in control have been too few and too selfish—because they have conceived this control as is always the case with new-found powers, as peculiarly a personal affair and not subject to the rights of others.

The wider spread of stock ownership combined with fair management ought to offer to all who contribute effort toward industrial success, just what democracy offers to citizenship a participation in that success in proportion to the ability of their effort.

The eventful, reasonable, and indeed, from the practical standpoint, the only attainable adjustment of the capitalistic system must come through this wider spread of participation among those engaged in its operation. This is the true democracy of industry. For if any industrial system is to succeed and progress in a democracy, it must be satisfactory to the majority, and not merely be endured as it might be in an autocracy.

This wider spread makes all the more necessary and important the work of management and the industrial executive, because failures and losses with the larger spread cause the wider loss and suffering, which would bring about a lack of confidence, and support would act as a brake on the spread itself.

The lines between capital management, and labor as intimated,

*Management and Administration.

are not sharply drawn in industrial America except as to the active functions of each. As individuals, anyone may belong in two of these classifications, and in practice many do. Time is proving positively, as industry advances in America, that one may readily start in one class, even in the lowest degree, and eventually land in either of the others, even in the highest degree. This is because America is a land of opportunity and individualism, and its industry an invitation to the ambitious and courageous. But even more than that it is because widespread capitalism is the natural and only solution in our form of civilization, of the material side of community life so frequently sought to be solved by the "isms." And this development must depend largely on a highly developed management.

It is hardly conceivable that the capitalistic system should die or be displaced, or even cease to grow. We have seen one country, Russia, make the experiment in one direction to solve both the problems of government and of industry by a great radical move. We have seen other countries court disaster by holding too rigidly to the old ways. It is not time for America to lead, by peaceful common-sense and technically correct methods, and by the introduction of a spirit and a soul into industry, to the broader and more successful industrial development she has already attained in government?

While the capitalistic system cannot die or be displaced, it may well be broadened so that that benefits of industry may become more widely and equitably distributed. As it is widened, there must be, as there have been, leaders—men of shrewdness and courage—capitalists, but not purely profit-makers so much as men of constructive vision with willingness not only to lead but to share. It is this kind of capitalism which will commend itself that all fair and ambitious men will support it and avail themselves of its benefits.

Labor must, of course, always constitute an essential part of the industrial system, for without it there is no production. The dreams of very short hours and entire machine production as of approximate attainment are of more harm to labor itself than any others of the industrial group. For labor there should be fair working conditions, reasonable wages, proper standards of living, continuous employment, education, thrift, insurance, and stock ownership, and in these there should be constant development. On the other hand, they should command from labor full co-operation.

Management a Group Proposition

Management, as it is developing, is also a group proposition, composed of those with initiative, responsibility for results, and authority. In its ranks are found all those who direct and control, from the chief accountant to the storekeeper, as well as from the chief executive to the foreman.

But the heart of management must be the industrial executive. Since the management group includes, as does every group of human beings, individuals of varying ages, experiences, abilities, and temperaments, and as these must act together with definite policy and coordination toward a constant and economical flow of calculated results, it follows from the very law of group success that one executive mind, or an organized unit of executive minds, must inspire, animate, and direct the whole group if progressingly results are to be obtained.

The far-reaching importance industry has already attained, and its still rapidly developing growth, demand that this one or more men in each industrial unit—forming a large and important group of men in all industry—be composed of the highest class of executive ability.

Speaking broadly, the returns from industrial operation must not only provide for proper maintenance, necessary expansion, research, and improvement, but for social welfare of the community, the workers, and the stockholders. The time is rapidly passing when stockholders' profits alone shall be the sole or even the main aim of industrial executives. More and more, men of large vision, wide comprehension, and particularly of a progressive understanding in the aims, methods, and responsibilities of management are needed, not only in the rendering of service to their stockholders but to those who serve with management in all degrees and to the world at large for business is a service.

Point of View of the Industrial Executive

The industrial executive, then, should be a man educated along the lines of his work—a trained man, a man not only with plans and capable of planning, but with policies and an ability to vision them. And beyond all, he must be a man responsive to the appeals of humanity, who at the same time can make decisions and enforce strict discipline with justice and a fair consideration of service as the basis of his operations. He should be the man with broad outlook to recognize his unit as a service to the public as well as to those engaged in the business itself. This, then, is his job.

But he should also have an insight as well as an outlook, because there are coming to him, constantly, internal problems—questions of processes, practical decisions to be made, personnel matters to be determined, and difficulties and delays, the smoothing out and settling of which make for his leadership.

The industrial executive, when he considers his responsibilities from the broad viewpoint, must primarily look upon industry as a service to the world because without that fact industry would not exist. This very viewpoint is of profit-making value because it compels consideration of qualities, serviceability, extent of use, popularity, price comparisons, and requires also a constant study of products and markets.

This viewpoint also compels a consideration of the policies of the business in relation to competition, trade organizations, financial institutions, government, the community—things that make the outlook of the industry.

On the other hand, the internal requirements of the business compel a consideration of service as it concerns the workers, and the comparative service values of the workers, processes, methods, systems, and especially the plan of organization.

It is only by a study of the aspects of the business, both of the outlook and the insight, that an executive is led on to the best success for his company and for those concerned. Nothing is so narrowing as to concentrate alone on profit-making. Nothing is so profit-making as to get the broader aspects of outlook and insight and definitely to operate on conclusions drawn from the results of their study.

The Ideal Executive

The industrial executive if he is to develop the true economies of industry in his active practice, must, naturally, have an understanding of them and of the principles on which industry is founded. He must also be far-seeking—a man who, while operating in the present, keeps his eye constantly fixed on the future.

Gradually the principles of scientific management are being understood and the developments of modern industrial engineering are seeping into the practice of many industrial units. But it may not be an unfair statement, that, while many industrial units are successful because of the shrewdness and natural business abilities of their managers, too many industrial executives depend wholly upon their practical experience and common sense—splendid and necessary as these may be—to handle the running situation, and too few have a conception of, or attempt to obtain a clear understanding of, industry as a whole and its detailed principles of operation.

What, then, must the industrial executive be, and know if he is to be the ideal executive?

There is a need in every industrial unit of an executive who comprehends the significance of industry, its relation in service to the world outside of it, and to the people inside of it, the values of friendly competition and the trends of industry, and from this understanding develops broad policies.

He should have some definite understanding of markets, even of

foreign ones, and of advertising—of the methods of informing the world of the service his organization offers.

He should have some definite comprehension of his relation to his community, for upon the character of his community rests not a little the quality and success of his labor.

He should understand and join in those co-operative movements, fairly visioned and managed in the general good, for industrial progress and protection, because it is part of his duty to provide these broader movements and also because their success reacts to the advantage of his own unit.

In every industrial unit there ought to be a clear understanding by the executive of the value of building, maintaining, educating, and inspiring an executive organization. Even in smaller organizations, the best success is to be gained by the co-ordinated effort of a number of loyal and active minds, and, if an industrial unit is to be valuable to the world, this executive organization must be such as will carry it on independently of any one personality.

Industry is not in its infancy, and there is a large amount of important knowledge vastly more applicable to the operation of industrial units than actual practice seems to indicate. What is needed in every unit is at least one executive who will give direction, education, and training, and foster research in those methods and their application to the particular operations of his unit.

Also it is essential in every successful and growing industrial unit that there be a clear understanding of finance and banking; capital relations to production, distribution, inventories; amount of business done to credits and debits. This necessarily involves a reasonable understanding of accounting and especially cost accounting.

There must be, of course, skill in processes and operations, and there is unquestionably need, in more units than now possess it, of a definite and progressive scheme of laboratory testing and research work if qualities and standards are to be maintained and raised. The industrial executive may not be the master of such methods, but he ought to be able to guide and control them.

The Executive's Control

The old idea that the owner or his representative has feudal rights and can justly discharge employees at will is being replaced as being both impractical and unprofitable, by the idea that those who cast in their lot in loyalty and service for the general good are entitled to the fairest treatment as co-partners in the total effort. There is, therefore, no greater need in the industrial unit today than of executives who have some comprehension of the psychology of the situation, and who will handle labor so justly and humanly as to gain its good-will.

This must not be interpreted, however, to mean anything else than that industrial units, to attain success, must be operated as autocracies of ability. The few must plan, and insist upon the intelligent but disciplined carrying out of their plans. Whatever democracy there is in industry, for the worker—outside his right to work or quit—should be practically limited to an insistence on fair working conditions, and some representation in the consideraton of what constitutes such conditions.

Now if the industrial executive is to maintain these relations properly he must have, certainly, some general understanding of the economics of industry. In practice, there is a vast inability on the part of industrial executives to explain the economics of the situation in which they operate and believe, and of the economic laws under which they expect their employees to operate happily. Yet the situation demands constant explanation in both word and deed if full co-operation and not forced compliance is to be gained.

Utilization of Operating Economies

Certainly there is a need among industrial executives for a broader understanding and systematic application of the economies of industry. The values to be obtained have been amply shown by commissions and investigations in such matters as standardization, simplification, and reduction of styles. There are, as every engineer knows, great opportunities of economies in balancing and in keeping up to date in equipment, in reducing the daily material production wastes, in restricting labor turnover, and in conservation of labor.

There is also a great possibility of economy in organization concentration—the operation of every man from top to bottom toward the definite results for which the industrial unit is aiming. Nor can the more important economies of industry be satisfactorily obtained except through the methods developed by industrial engineering and the introduction of detailed systems, reports, reward plans, production planning and routing, and constant research methods.

Industry is distinctly an engineering operation, and if the industrial executive is not an engineer himself—since he must be a business man and there seems to have grown up the idea that he may not always be both a business man and an industrial engineer—then certainly industrial success demands that he must be able to understand, introduce, and control these abilities in his unit.

While it may be hardly expected that any appreciable percentage of industrial executives will be versatile enough to combine in their own persons all the knowledge and abilities of the ideal executive, they can nevertheless have an appreciation of them, obtain the necessary personnel, and inspire and control them.

"Industrial Democracy"

Industry has often of late been threatened with the term "Industrial Democracy." If such a term characterizes a condition of industry in which the workers as a group control and operate it, then industry is in for a bad turn, should "Industrial Democracy" come about, for there does not exist and is not likely to exist among the workers the necessary ability for the broad and successful operation of industry. In America such ability quickly leaves the ranks of labor and advances into the classes of management and capital.

If the term "Industrial Democracy" is intended to convey the meaning that the workers shall be given some voice in their working conditions, and be fairly and with friendliness consulted in the larger scheme of co-operation, and have the opportunity by capital participation to become stockholders, then the term has a reasonable significance, for already in America the worker has the right to choose and change, to rise and own.

In conclusion, if we are to approach more nearly to a scientifiic management in our industrial units, then our industrial executives must educate themselves, must be familiar with the literature and methods of industry, and must study and train themselves and others along the lines of its broader needs—must in a sense become industrial engineers and see it, as to the public and to those more intimately involved, a service in which there are possibilities of a high career.

If, then, there be added the open, the inquisitive, and the initiatory mind, and a high executive ability with the ear to listen and the will to adopt that which is good, then industry with its rapidly advancing requirements in all phases of its development will gladly absorb and use them in its progress toward world service.

Tupelo As a Pulpwood Considered Important

NEW ORLEANS, La., September 22, 1924.—A study of the growth of tupelo in second-growth stands has for some time been under way in the South, and the members of the Southern Forest Experiment Station who have it in hand hope soon to be in a position to make the results public. The importance of the study, according to the United States Forest Service, lies in the fact that a mixture of half tupelo and half Southern pine has been found to produce an excellent quality of book paper. The consequent interest in this wood on the part of the pulp and paper industry warrants obtaining exact information regarding its growth and yield.

The South has furnished pulpwood in the past, but only for the manufacture of wrapping paper, containers, and similar products. If tupelo comes up to its promise as an important pulpwood, it is expected that the result will be of benefit both to the paper industry and to the timber owners of the South.

New York Trade Jottings

Notice has been filed at Albany of the merger of the Republic Bag Company, Inc., with the Republic Bag and Paper Company, both of 200 Fifth avenue.

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, has been spending the week visiting some of the mills in Massachusetts.

* * *

Thomas J. Burke, secretary of the Cost Association of the Paper Industry, is in attendance at the annual convention of the National Association of Cost Accountants now in session at Springfield, Mass.

* * *

Warren B. Bullock, manager of the Import Committee of The Paper Industry, went to Philadelphia yesterday to investigate some reports of abuses of the custom laws and to help the custom authorities check up on some instances of misclassification.

* * *

O. M. Porter, assistant secretary of the American Paper and Pulp Association, has returned from Springfield, Mass., where he attended a meeting of members of the American Waxed Paper Association.

* * *

The T. E. Boyd Paper Company, Manhattan, has filed articles of incorporation with the Secretary of State of New York with capital stock placed at $20,000. The incorporators are T. E. Boyd, H. M. Sheridan and H. M. Rieneke and the attorney is W. C. Ridgway, 42 Park Row.

* * *

The regular fall meetings of the News Print Service Bureau will be held in this city Tuesday and Wednesday, October 21-22. The Tuesday meeting will be held at the Canadian Club and will be of a technical character for the discussion of cost accounting and engineering problems. The Wednesday meeting will be held at Hotel Commodore and will be of a general nature, an interesting program being promised. The Bureau hopes that everyone of its members will plan to attend.

W. L. Otis Receiver for Van Gorder Co.

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., September 22, 1924.—The Van Gorder Company, Lincoln avenue and Schippers Lane, for several years engaged in the paper ruling business under the management of Ray R. Van Gorder, has been declared bankrupt and Walter L. Otis, president of the Kalamazoo National Bank, has been named receiver of the concern.

Mr. Otis said that while no definite action has been taken to date, that it is hoped to perfect arrangements whereby the business can be rehabilitated and continued under other management. Negotiations are now under way to interest other parties to take hold of the industry, install more equipment and increase the capital.

Seth L. Bush Addresses Rotarians

[FROM OUR REGULAR CORRESPONDENT.]

NORTH ADAMS, Mass., September 23, 1924.—Seth L. Bush, research manager of the Crocker McElwain Company of Holyoke, told the members of the Rotary Club at their last meeting that New England service is the secret of her success. "New England must prepare for changes in conditions which she cannot live without," he said. The secret of New England supremacy, he declared, lay not in any particular line of goods but in the development of staunch New England men.

Trade-Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offes to them an advance search free of charge on any mark they may contemplate adopting or registering.

ROYAL CROWN—No. 197,432. Hampton Roads Paper Company, Norfolk, Va. For toilet paper.

ALMAX—No. 197,626. Al. M. Silverstein & Bro. Inc., New York. For wrapping paper, tissue paper, writing paper, pencils and typewriting papers, manifold order books, folders, gummed paper and tape, tags, toilet rolls, paper towels and envelopes.

PRINCESS—No. 197,692. The Tissue Company, Saugerties, N. Y. For crepe paper and paper napkins.

DEXSTAR—No. 197,367. Same as above. For paper, toilet paper, tissue paper, etc.

LAROMA—No. 197,928. Fort Howard Paper Company, Green Bay, Wisconsin. For toilet paper, towels and napkins made of paper.

LENOX—No. 198,111. Carew Manufacturing Company, South Hadley Falls, Mass. For writing and printing paper and mailing envelopes.

ART KRAFT—No. 198,550. Wortendyke Manufacturing Company, Richmond, Va. For paper bags.

ART KRAFT—No. 195,122 Orono Pulp and Paper Company, Bangor, Maine. For wrapping paper.

CATARACT—No. 199,890. International Paper Company, New York City. For writing paper.

PULWON—No. 195,103. Harry N. Goldsmith, Philadelphia, Pa. For paper napkins, paper towels, paper wrappers for delicatessen lunches, and toilet paper.

KRINKLE KREPE—No. 196,322. The Tuttle Press Company, Appleton, Wis. For Crepe Paper.

JIFFYSTENCIL—No. 197,340. Pangborn Corporation, Hagerstown, Md. Glue paper which is used in the monument trade to cover the face of marble in lettering and design work by the sandblast process.

UNISERV—No. 197,898. Northern Paper Mills, Green Bay, Wis. Toilet paper.

PRYNTX—No. 200,006. New York & Pennsylvania Company, Castanea, Pa. For printing and lithographing paper.

VELVET—No. 199,966. American Tissue Mills, Holyoke, Mass. For crepe paper of various colors and combinations of colors in rolls, folds, and other packages.

TEXTILE—No. 199,967. American Tissue Mills, Holyoke, Mass. For same as above.

SILKENE—No. 199,968. American Tissue Mills, Holyoke, Mass. For same as above.

VELVO—No. 199,969. American Tissue Mills, Holyoke, Mass. For same as above.

NYPRINT—No. 200,007. New York & Pennsylvania Company, Castanea, Pa. For printing and lithographing paper.

BIRD'S-EYE—No. 200,032. Philip H. Bird, Boston, Mass. For correspondence paper and envelopes.

Dells Paper & Pulp Co. Damaged by Fire

EAU CLAIRE, Wis., September 22, 1924.—Fire early on the morning of September 12 caused damage estimated in excess of $25,000, at the plant of the Dells Paper and Pulp company here. The blaze evidently started near the switchboard and defective wiring is thought to have been the cause.

Included in the loss was a 900-horse power electric motor. Other machinery was destroyed and two buildings partly burned. Firemen fought the blaze for more than two hours before it was extinguished.

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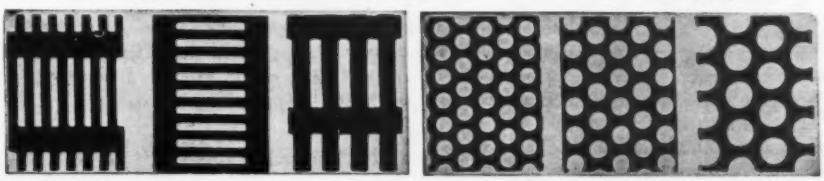

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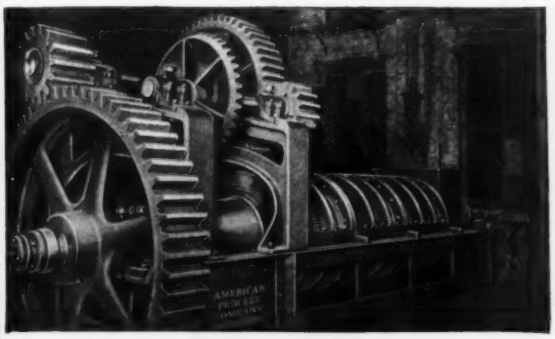

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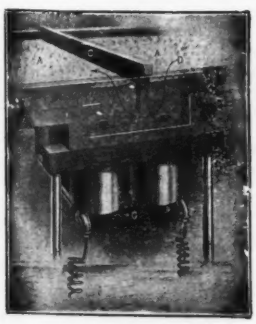

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A FOREST POLICY FOR NORTH AMERICA

By R. S. Kellogg, Chairman National Forestry Program Committee

It is a striking coincidence that the 100-page Bulletin of the United States Department of Agriculture entitled "How the United States Can Meet Its Present and Future Pulpwood Requirements" and the 292-page reports of the Canadian Royal Commission on Pulpwood should appear at practically the same time, but it is more than a coincidence that in essential recommendations the two reports are identical. Nature knows no international boundaries and neither do the greatest enemies of the forest—fire, insects and disease.

The recommendations in these reports are briefly summarized below in the order in which they appear, but not necessarily the order of greatest importance:

The Share of the Public in the Maintenance of the Pulpwood Supply in the United States.

(Abstract of Recommendations by the United States Forest Service.)

1. Extended and improved forest protection in co-operation with private owners.
2. Equitable forest taxation.
3. Encouragement of satisfactory forms of timber insurance.
4. Research upon pulpwood and pulping processes.
5. More research by forest experiment stations into problems of reforestation, timber growing and forest protection.
6. A timber survey to determine supplies, needs and available forest lands.

NOTE:—Legislation already in force in the United States through the McNary-Clarke law, the Weeks law and various acts for the administration of the National Forests make unnecessary some of the recommendations carried in the Canadian report.

A Canadian Forest Policy

(Abstract of Recommendations made by the Royal Commission on Pulpwood)

1. Land classification of publicly owned areas to determine which should be assigned to permanent forest production through the creation of National and Provincial Forests.
2. Federal and Provincial legislation foor the application of a Dominion-wide forestry program.
3. Enlargement, reorganization and co-ordination of the Federal and Provincial forest services on a scale commensurate with the importance of the administration of Canada's second greatest natural resource.
4. Adequate provision for forest protection including works of improvement in co-operation with the Provinces.
5. Provision for forest surveys and inventories.
6. The application of the principles of forest management to forest lands in public control so far as economic conditions permit.
7. Continued and enlarged tree planting activities.
8. More silvicultural research, including studies in timberland taxation, and the establishment of forest experiment stations.
9. The application of a much larger part of the revenue from forest lands to their protection and management, and the assurance of continuity in appropriation for the forest services.

Ninety Per Cent Publicly Owned

In round figures, ninety per cent of Canada's forest area is publicly owned and ten per cent privately owned. In the United States the reverse is true with eighty per cent privately owned and twenty per cent publicly owned. But for both countries there is set up in these official reports the basic principle of Federal, State or Provincial, and private co-operation for the solution of the pressing problems of forest protection, forest management and forest utilization. This principle was recognized in the McNary-Clarke law enacted by Congress in June, 1924, and will be given similar recognition if there ensues the legislation suggested by the Royal Commission on Pulpwood.

INTEREST CONTINUES IN RIORDON SALE

(*Continued from page* 38)

have been easily put out. "Favorable weather conditions are not alone responsible for the decrease in timber destruction which has so far taken place," stated Mr. Black. "Improved organization of the Government forces for fighting fires and those of limit holders, also had much to do with it. Another factor is the growing recognition on the part of the general public of the wastefulness of fires and the guilt of the ordinary citizen who causes them." Campers and settlers who were formerly to blame for tremendous loss, were now taking precautions which they would not have dreamt of taking ten years ago. Mr. Black said that he could not give any figures for the number of fires since January, but they were very low compared with those of last year when the number reached 5,000.

Pulp and Paper Mills in Canada

The preliminary report of the pulp and paper industry for 1923 just issued by the Forest Products Branch of the Dominion Bureau of Statistics indicates that this industry has made another advance in the process of recovery from the unsatisfactory conditions of three years ago. From the time of its establishment in Canada in 1803 until the post-war depression of 1921 papermaking showed a steady increase. There was a heavy falling-off in 1921, 1922 was a period for readjustment but with increases in several lines, and 1923 shows a total increase. If the net value of production for the entire pulp and paper industry be considered as the sum of the value of (1) pulpwood exported, (2) pulp made for export, and (3) paper manufactured, then the totals for the years mentioned stand as follows: 1920, $230,199,717; 1921, $157,426,587; 1922, $152,209,711; 1923, $183,226,218. The capital investment of $417,611,678 represented an increase of 9.6 per cent over 1922. The total number of employees was 29,179 as compared with 25,830 in 1922 and the total payroll $38,305,157, as compared with $32,918,955. The number of pulp and paper mills was 110, as compared with 104 in the previous year.

Whalen Pulp and Paper Company

While an effort is being made by the bondholders' protective committee to bring about early reorganization of the Whalen Pulp and Paper Mills, Limited, of Port Alice, B. C., settlement is not yet in view. The mills are understood to be in satisfactory operation at the present time, but a great deal of the future success of the organization depends upon the ability of the company to pay its way. The trend of the sulphite pulp market is being closely studied by those in charge, and every effort is being made to re-develop the Oriental market, which was badly unsettled by the effect of the Japanese earthquake and by the unusual financial conditions which have since prevailed both in that country and in China. An effort has also been made to develop intensively the more immediate Pacific Coast market. Some shipments have been made to the Eastern markets via the Panama Canal but the transportation costs and the time involved on this long haul are detrimental to the building up of a very large traffic with this market. Much interest has been taken in the effort being made by Hon. T. W. McGarry, K. C., to organize the debenture holders, but up to the present time it is not known how well the deposit of the debentures with the committee have gone forward. A number of holders report that they have not yet received deposit requests from the committee.

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GLASSINE BAGS—SPECIALTIES

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on a Paper Bag vouches for Its Good Quality

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and the

Hanna Paper Corporation

Daily Capacity, 425 Tons

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This insures greater freedom from impurities and an exceedingly uniform product.

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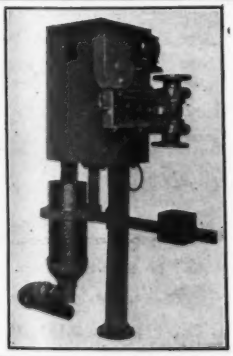

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For ALL of his Machines.

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TRIMBEY MACHINE WORKS, Glens Falls, N. Y.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

SUMMARY

News print.....1,348 rolls
Printing paper.....281 bls., 263 cs., 270 rolls
Wallpaper .....8 cs.
Filter paper.....24 cs., 2 bls.
Packing paper.....25 cs.
Wrapping paper.....321 bls., 2,333 rolls, 8 cs.
Drawing paper.....26 cs.
Cigarette paper.....228 cs.
Decalcomania paper .....2 cs.
Hanging paper .....332 rolls
Parchment paper.....6 rolls
Kraft paper.....83 rolls, 58 bls.
Surface coated paper.....73 cs.
Writing paper .....19 cs.
Photo paper .....3 cs.
India paper.....14 cs.
Miscellaneous paper.....43 cs.

CIGARETTE PAPER

Rose Frank, Britannia, Marseilles, 26 cs.
F. P. Gaskell & Co., W. Eldara, Havre, 30 cs.
Standard Products Corp., by same, 120 cs.
P. J. Schweitzer, Lafayette, Havre, 52 cs.

WALL PAPER

Whiting & Patterson Co., Inc., Berengaria, Havre, 8 cs.

HANGING PAPER

Drinhausen, Hollkott Paper Co., Coaxet, Rotterdam, 332 rolls.

NEWS PRINT

M. Gottesman & Co., Inc., Stockholm, Gothenburg, 588 rolls.
J. Anderson & Co., by same, 98 rolls.
W. Hartmann & Co., Pittsburgh, Hamburg, 91 rolls.
Norwegian Papermills Agency, Inc., Norefjord, Kristiania, 163 rolls.
Parsons & Whittemore, Derrflinger, Bremen, 408 rolls.

PRINTING PAPER

M. O'Meara Co., Derrflinger, Bremen, 281 bls.
C. Steiner, Pittsburgh, Hamburg, 19 cs.
Seaman Paper Co., by same, 80 rolls.
J. H. Scott Paper Co., by same, 190 rolls.
P. C. Zuhlke, Dakarian, Antwerp, 160 cs.
C. Steiner, Volendam, Rotterdam, 33 cs.
P. C. Zuhlke, Zeeland, Antwerp, 57 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Zeeland, Antwerp, 16 cs.
P. C. Zuhlke, Dakarian, Antwerp, 57 cs.

FILTER PAPER

A. Giese & Son, Pittsburgh, Hamburg, 3 cs.
A. Giese & Son, by same, 2 bls.
H. Reeve Angel & Co., Inc., Saxonia, London, 2 cs.
E. Fougera & Co., Berengaria, Bordeaux, 19 cs.

WRITING PAPER

Guibout Freres, Berengaria, Havre, 12 cs.
P. Puttmann, Britannia, Marseilles, 5 cs.
H. Snellenberg, West Eldara, Havre, 2 cs.

PHOTO PAPER

J. J. Gavin, Adriatic, Liverpool, 3 cs.

WRAPPING PAPER

C. K. MacAlpine Co., Stockholm, Gothenburg, 53 bls.
A. E. MacAdam, by same, 3 bls.
A. E. MacAdam, by same, 1,794 rolls.
D. S. Walton & Co., by same, 68 rolls.
D. S. Walton & Co., by same, 80 bls.
Brooklyn Standard Bag Co., by same, 142 rolls.
Wilkinson Bros. & Co., Inc., Norefjord, Bergen, 326 rolls.
Wilkinson Bros. & Co., Inc., by same, 66 bls.
Whiting & Patterson Co., Inc., Fred. VIII, Copenhagen, 17 bls.
F. C. Strype, Zeeland, Antwerp, 8 cs.
F. C. Strype, by same, 3 rolls.
J. P. Heffernan Paper Co., Mount Clay, Hamburg, 102 bls.

PACKING PAPER

Hudson Trading Co., Coaxet, Rotterdam, 6 cs.
Pulp & Paper Trading Co., Volendam, Rotterdam, 4 cs.
Keuffel & Esser, by same, 15 cs.

DRAWING PAPER

Keuffel & Esser, Volendam, Rotterdam, 26 cs.

PARCHMENT PAPER

Newark Paraffine & Parchment Paper Co., Volendam, Rotterdam, 6 rolls.

KRAFT PAPER

Arkell Safety Bag Co., Stockholm, Gothenburg, 83 rolls.
Arkell Safety Bag Co., by same, 58 bls.

DECALCOMANIA PAPER

Phoenix Shipping Co., Columbus, Bremen, 2 cs.

INDIA PAPER

Ault & Wiborg Co., Cyclops, Hongkong, 14 cs.

PAPER

Bloomingdale Bros., Chicago, Havre, 4 cs.
Coenca, Morrison & Co., by same, 7 cs.
American Express Co., Lafayette, Havre, 14 cs.
Hensel, Bruckman & Lorbacher, by same, 14 cs.
Erstein & Co., by same, 4 cs.

RAGS, BAGGINGS, ETC.

L. H. Abenheimer, Pittsburgh, Hamburg, 65 bls. rags.
Katzenstein & Keene, Inc., Chicago, Rouen, 79 bls. baggings.
E. J. Keller Co., Inc., Chicago, Havre, 179 bls. baggings.
Belgian Bank, by same, 20 bls. rags.
Brown Bros. & Co., Dromore, Belfast, 108 bls. rags.
Hughes Fawcett, Scythia, Liverpool, 16 bls. flax waste.
Castle & Overton, Hektor, Barcelona, 28 bls. rags.
Castle & Overton, by same, 56 bls. baggings.
E. Butterworth & Co., Inc., by same, 87 bls. rags.
Manufacturers Trust Co., by same, 86 bls. rags.
A. W. Fenton, Inc., Eastern Victor, Antwerp, 167 bls. rags.
E. J. Keller Co., Inc., by same, 851 bls. rags.
E. J. Keller Co., Inc., by same, Antwerp, 197 bls. baggings.
S. Birkenstein & Son, by same, 238 bls. baggings.
Equitable Trust Co., Dakarian, Antwerp, 82 bls. flax waste.
Guaranty Trust Co., London Mariner, London, 44 bls. rags.
Castle & Overton, by same, 22 bls. rags.
E. J. Keller Co., Inc., I. Floris, Genoa, 51 bls. thread waste.
E. J. Keller Co., Inc., by same, 25 bls. linen cuttings.
C. R. Spence, Chicago City, Bristol, 185 bls. paper stock.
Second National Bank of Boston, by same, 251 bls. rags.
W. C. Gaunt & Co., Conchatta, Dublin, 154 bls. paper stock.
Brown Bros. & Co., by same, 94 bls. paper stock.
Prince & Kennedy, by same, 46 bls. paper stock.
Belgian Bank, Derrflinger, Bremen, 89 bls. rags.
Chase National Bank, by same, 83 bls. rags.
Philadelphia National Bank, by same, 55 bls. rags.
Philadelphia National Bank, Laura, Trieste, 356 bls. rags.
L. H. Abenheimer, Laura, Venice, 118 bls. rags.
Castle & Overton, Volendam, Rotterdam, 60 bls. rags.
G. M. Graves & Co., by same, 10 bls. rags.
D. M. Hicks, by same, 21 bls. rags.
P. Berlowitz, by same, 93 bls. rags.
P. Berlowitz, West Eldara, Havre, 340 bls. rags.
P. Berlowitz, by same, 107 bls. baggings.
W. H. Cummings & Son, by same, 72 bls. rags.
D. M. Hicks, West Eldara, Dunkirk, 41 bls. rags.
Anglo South American Trust Co., Zeeland, Antwerp, 330 bls. flax waste.
Equitable Trust Co., by same, 175 bls. flax waste.
British Bank of South America, Adriatic, Liverpool, 38 bls. rags.
P. Berlowitz, Coaxet, Rotterdam, 34 bls. rags.
J. J. Patricof, by same, 173 bls. rags.
Royal Manufacturing Co., by same, 32 bls. cotton waste.
E. J. Keller Co., Inc., by same, 288 bls. rags.
Castle & Overton, by same, 448 bls. rags.
Textile Trading Co., by same, 565 bls. rags.
Katzenstein & Keene, Inc., by same, 29 bls. rags.
Katzenstein & Keene, Inc., Crosby Hall, London, 54 bls. rags.
Castle & Overton, California, Glasgow, 28 bls. rags.
Castle & Overton, Pres. Harding, Bremen, 31 bls. flax waste.
E. J. Keller Co., Inc., Cleveland, Hamburg, 88 bls. flax waste.
E. J. Keller Co., Inc., by same, 315 bls. rags.
E. J. Keller Co., Inc., by same, 100 bls. rag pulp.
E. J. Keller Co., Inc., Texas Maru, Hamburg, 111 bls. flax waste.

OLD ROPE

Brown Bros. & Co., Zeeland, Antwerp, 146 bales.
Brown Bros. & Co., Chicago City, Bristol, 149 coils.
U. S. Mortgage & Trust Co., Derrflinger, Bremen, 100 coils.

WOOD PULP

Lagerloef Trading Co., Inc., ———, Nitara, 1,055 bls. chemical pulp.
Johaneson, Wales & Sparre, Inc., Stockholm, Gothenburg, 1,900 bls. sulphite pulp.
Johaneson, Wales & Sparre, Inc., by same, 125 bls. sulphate pulp.
J. Anderson & Co., by same, 250 bls. wood pulp.
J. Anderson & Co, Norefjord, Sarpsborg, 1,050 bls., 176 tons sulphite pulp.
Buck, Kiaer & Co., by same, 1,205 bls., 244 tons sulphite pulp.
E. M. Sergeant & Co., Fred. VIII, Christiania, 140 bls. wood pulp.
Hartig Pulp Co., Coaxet, Rotterdam, 1,118 bls., 192 tons wood pulp.
Castle & Overton, by same, 1,034 bls., 219 tons wood pulp.
Price & Pierce, Ltd., Tasmanic, Gothenburg, 800 rolls wood pulp.
Johaneson, Wales & Sparre, Inc., by same, 250 bls. sulphite, and 140 bls. Kraft pulp.

WOOD FLOUR

B. L. Soberski, Norefjord, Sarpsborg, 1,500 bags, 153,000 kilos.
B. L. Soberski, Fred. VIII, Christiania, 1,500 bags, 102,000 kilos.

CASEIN

T. M. Duche & Sons, Cubano, Buenos Aires, 1,384 bags, 83,040 kilos.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

G. F. Malcolm, West Lake, Liverpool, 12 cs. paper.
Leschner Paper Stock Co., by same, 134 coils old rope.
On order, by same, 136 bls. paper stock.
Castle & Overton, West Inskip, Rotterdam, 127 bls. wood pulp.
Butterworth & Co., by same, 221 bls. old rags.
Geo. M. Graves, by same, 105 bls. old rags.
Leigh Butler, by same, 2 cs. parchment.
Bemis Bros. Co., Taurus, Scandinavian Ports, 65 coils old rope.
Bulkley Dunton Co., by same, 1,500 bls. moist mechanical wood pulp.
Buck, Kiaer Co., by same, 250 bls. dry sulphite wood pulp.
J. Anderson & Co., by same, 3,138 bls. dry bleached sulphite wood pulp.

(Continued on page 62)

Perforated Metal Screens

For Pulp and Paper Mills

.065 Inch Round

STEEL, COPPER, BRASS, BRONZE and other Alloys

punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

⅛ x ½ Inch Slots

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For Fast New Machines

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The B Co. INC. QUALITY PULPS

"HAFSLUND BEAR" Bleached Sulphite

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Genuine Vegetable Parchment

For wrapping all moist and greasy foodstuffs.

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For tight-sealing cartons and wrapping dry foods.

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All standard sizes, weights and colors.

Handy Household Papers in Rolls

Ask and ye shall receive full information.

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Manufacturers of PARCHMENT, WAXED and BOND PAPERS

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THE WM. CABBLE EXCELSIOR WIRE MFG. CO.

Established 1848
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Manufacturers of Superior Fourdrinier Wires
Brass, Copper and Iron Wire Cloth of every Description.
Best Quality of Wire Rope.

Write for Price List

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WE BUILD

Head Gates and Gate Hoists

FOR ALL PURPOSES

Our Illustrated Catalogue Mailed Upon Request

DAYTON BEATER & HOIST CO.

Dayton, Ohio

Imports of Paper and Paper Stock

(*Continued from page 60*)

Borregaard Co., by same, 465 bls. dry bleached sulphite wood pulp.
Wilkinson Bros. & Co., Naperian, Hamburg, 75 bls. wrapping paper.
Columbia Counter Co., by same, 8 cs. paper.
Second National Bank, by same, 370 bls. old rags.
Lee Higginson, by same, 47 bls. old rags.
Geo. M. Graves, by same, 316 bls. old rags.
D. L. Walton Co., by same, 10 bls. paper.
On order, by same, 28 reels news paper.
F. A. Chase, Providence, by same, 116 reels packing paper.
Furness, Withy Co., Galtymore, Glasgow, 107 bls. old rags.
Geo. M. Graves, by same, 82 bls. old rags.
Brown Bros. Co., by same, 72 bls. old rags.
South American Trust Co., Sagaporag, London, 114 bls. old rags.
T. D. Downing Co., by same, 35 reels paper.
Crocker, Burbank Co., by same, 130 bls. waste paper.
Katzenstein & Keene, by same, 54 bls. old rags.
Brown Bros., by same, 277 bls. old rope.
G. H. Malcolm, Winifredian, Liverpool, 15 cs. tissue.
James P. Heffernan Paper Co., Laura, Italian Ports, 190 reels news paper.
National City Bank, by same, 490 bls. dry chemical wood pulp.
E. Butterworth, Burgerdyk, Rotterdam, 143 bls. old rags.
On order, by same, 264 reels straw board.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

Castle & Overton, Taurus, Scandinavia, 2,000 bls. moist mechanical wood pulp.
Atterbury & McKelvey, by same, 1,800 bls. dry sulphite wood pulp.
Philadelphia National Bank, by same, 601 reels paper.
Buck, Kiaer & Co., by same, 500 bls. dry sulphite wood pulp.
Borregaard Co., by same, 285 bales dry bleached sulphite wood pulp.
International Acceptance Bank, Naperian, Hamburg, 14 rolls printing paper.
Philadelphia National Bank, by same, 309 bls. old rags.
Brown Bros. Co., by same, 85 bls. old rags.
National Bank of Commerce, by same, 929 bls. old rags.
On order, by same, 180 bls. old rags.
Philadelphia National Bank, Galtymore, Glasgow, 50 bls. paper stock, 61 coils old rope.
E. H. Bailey Co., by same, 23 cs. printing paper.
On order, by same, 413 bls. old rags.
M. Blair & Co., by same, 239 bls. paper stock.
Mechanics & Metals National Bank, by same, 145 bls. old rags, 313 bls. paper stock.
Old Colony Trust Co., by same, 111 coils old rope.
On order, by same, 1,212 bls. paper stock.
S. Birkenstein, by same, 96 bls. paper stock.
John A. Stern & Co., by same, 166 bls. paper stock.
Stone Bros., Burgerdyk, Rotterdam, 40 bls. old rags, 63 bls. new cotton rags.
E. J. Keller Co., Inc., by same, 112 bls. old rags.
Penn Rag & Metal Co., by same, 162 bls. old rags.
On order, by same, 341 bls. old rags.
T. N. Simon, by same, 178 bls. old rope.
Philadelphia National Bank, by same, 254 bls. old rags.
E. Butterworth, by same, 178 bls. old rags.
Geo. M. Graves, by same, 76 bls. old rags.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

Perkins, Goodwin Co., Taurus, Scandinavia, 522 bls. dry chemical wood pulp, 3,200 bls. air dry sulphite pulp.
Nilson, Lyon & Co., by same, 125 bls. dry chemical pulp.
Perkins, Goodwin Co., by same, 1,968 bls. dry chemical pulp.
Kidder, Peabody Acceptance Corp., by same, 2,500 bls. dry sulphite pulp.
Atterbury & McKelvey, by same, 750 bls. dry bleached sulphite pulp.
Buck, Kaier & Co., by same, 530 bls. dry sulphite pulp.
J. Anderson & Co., by same, 600 bls. dry sulphite pulp.
W. H. Hasson, West Inskip, Antwerp, 725 bls. old rags.
G. M. Graves, by same, 53 bls. old rags.
Johaneson, Wales & Sparre, Inc., Krosten Mearsk, Gothenburg, 2,750 bls. Kraft pulp.
Johaneson, Wales & Sparre, Inc., Taurus, Drammen, 3,000 bls. sulphite pulp.
Johaneson, Wales & Sparre, Inc., Jacob Mearsk, Kramfors, 9,126 bls. Kraft pulp, 1,350 bls. sulphite pulp.

PORTLAND, MAINE, IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

Poland Paper Co., Norefjord, Sarpsborg, 3,193 bls., 648 tons sulphite pulp.
Central Union Trust Co., Norefjord, Kristiania, 3,672 bls., 472 tons dry chemical pulp.
The Borregaard Co., Norefjord, Torsberg, 2,400 bls., 406 tons sulphate pulp.
The Borregaard Co., Tasmanic, Gothenburg, 1,998 bls. wood pulp.
M. Gottesman & Co., Inc., Tasmanic, Waija, 196 bls. wood pulp.
J. Anderson & Co., by same, 4,800 bls. sulphate pulp.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

British American Tobacco Co., West Inskip, Antwerp, 41 cs. printed Cigarette wrappers.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 20, 1924

Castle & Overton, Aquarius, Germany, 57 bls. rags.
Castle & Overton, Youngstown, Holland, 139 bls. rags.
Castle & Overton, Saugerties, Spain, 66 bls. baggings.

IN TRANSIT TO TORONTO, CANADA

The Prager Co., Volendam, Rotterdam, 500 bls. wallpaper.

C. A. Bradford to Start Coating Plant

KALAMAZOO, Mich., September 22, 1924.—Clarence A. Bradford, who will soon launch in Kalamazoo a new company for the manufacture of coated paper, closed an option Saturday afternoon for the purchase of the Dunkley Company's property on Fulford street and will convert it to his own use. Possession will be secured October 1 and within 60 or 90 days the actual production of coated stock will be possible.

The property taken over has an area of 305 feet north and south by 595 feet east and west. It contains a main factory building of high grade construction, being erected of brick, concrete and steel throughout. This building is 120 feet in width by 260 feet in length, large enough to accommodate four of the latest designed Waldron coating machines and auxiliary equipment.

There is also a power plant with all the capacity needed at this time and a fine heating plant, making possible the installation of a drying system in one section of the plant. A side track from the Grand Trunk railroad runs direct to the property.

"The only improvements necessary to be made on the plant at this time are the erection of a clay bin and a box shop" said Mr. Bradford. "Otherwise the property is entirely acceptable to our needs. The C. G. Spring Company during its term of lease of the property made several improvements adding to its value. Through agreement with Robert Flum, factory manager, these betterments are to be left when the C. G. Spring Company relinquishes possession. The C. G. Spring Company has been ordered to tear up and remove the cement floorings laid in two steel out buildings. I asked them to let the floors remain when the portable structures are taken down."

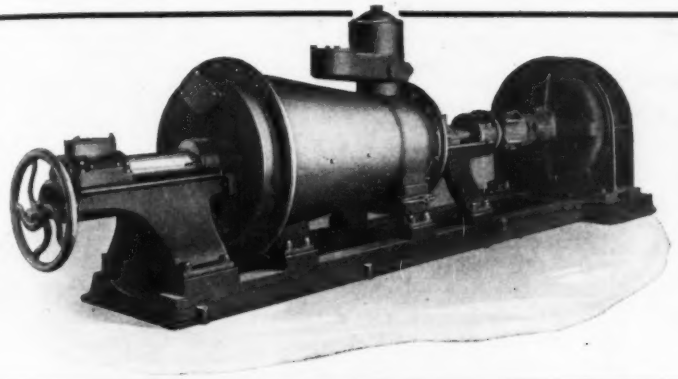
Mr. Bradford has resigned as vice president and general sales manager of the Rex Paper Company and within the next two weeks expects to perfect his new organization with a capital of $200,000. He has already placed his order for four 73 inch Waldron coaters, said to be the heaviest in the valley and also carrying more brushes. He will employ about 100 men and women at the outset.

The deal for the property was closed through the C. Fred White realty office. The price paid is not officially announced by Mr. Bradford, though it is reported to be under $80,000. The Dunkley Company offered the property to the C. G. Spring Company for $110,000. That was declined as excessive.

Pulpwood Caught in Booms

[FROM OUR REGULAR CORRESPONDENT.]

BELLOWS FALLS, Vt., September 20, 1924.—Between 8,000 and 10,000 cords of pulpwood that broke loose from the booms at Wilder were caught in the booms of the Bellows Falls Boom Company here the past week and will probably be used here or run down the river later to Turners' Falls for the mill of the International Paper Company in that place.



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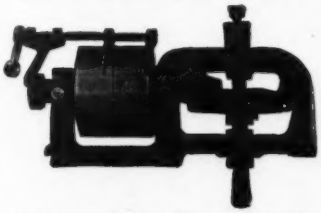
DILLON JORDAN

Our latest Improved Machine, three sizes; belt or direct connected motor driven. All Bearings self-oiling, adjustable and water-cooled. Fitted with Standard Steel Knives, Special Heat Treated Steel, Bronze or Manganese Steel Plug and Shell Lining.

For full particulars apply to

DILLON MACHINE CO., Inc.
Builders of Paper Mill Machinery
Lawrence, Mass.

AGITATOR DRIVES



Six Stock Sizes
Special Designs
"NETT-CO" line
is complete from
smallest to largest.

NEW ENGLAND TANK & TOWER CO.
30 CHURCH ST., N. Y. EVERETT, MASS.

Buchanan & Bolt Wire Co.
HOLYOKE, MASS.
Since 1878.

Fourdrinier Wires

Dandy Rolls

Cylinder Covers Best Quality Always

NORWOOD
PAPER FINISHING
MACHINERY

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NORWOOD ENGINEERING CO.
Florence, Mass., U. S. A.

PAPER MAKERS CHEMICAL CO.
WESTERN PAPER MAKERS CHEMICAL CO.

EASTON HOLYOKE KALAMAZOO
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CLAYS ROSIN SIZE
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FELT SOAP and OTHER SPECIALTIES

A Remarkable Range of Grades, Textures and Weights

Orr Endless Felts can now be obtained up to 86 feet in length.

With our enlarged new equipment we can now furnish Paper Manufacturers with endless felts up to 86 feet in length.

Paper Manufacturers who carefully check manufacturing costs, and also strive to produce more and better paper at a lower cost per ton, prefer the unvarying quality and long service of ORR felts. A trial of them will bring about a preference that will be lasting.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

Market Quotations

PAPER SECURITIES CLOSING PRICES TUESDAY

Reported by Stewart Tuttle & Co., Inc., 120 Broadway, New York

Stocks	BID	ASKED
Abitibi Power and Paper Company, Ltd.	58	59
Abitibi Power and Paper Company, Ltd, Pfd.	98¼	99
American Writing Paper Company, Pfd.	3	3¾
Brompton Pulp and Paper Company, Ltd.	32¼	33
Donnacona Paper Company, Ltd.	45	50
Donnacona Paper Company, Ltd., Pfd.	98	100
International Paper Company	48¼	48½
International Paper Company, Pfd.	72½	73
Laurentide Company, Ltd.	84	84½
Price Brothers	42¼	44
St. Maurice Paper Co., Ltd.	84	86
Smith (Howard) Paper Mills, Ltd.	30¼	30½
Spanish River Pulp and Paper Mills, Ltd.	108⅜	109
Spanish River Pulp and Paper Mills, Ltd., Pfd.	118½	119
Union Bag and Paper Corp.	41	42
Wayagamack Pulp and Paper Company, Ltd.	37	40
West Virginia Pulp and Paper Company	53	58

Bonds	BID	ASKED
Abitibi Power and Paper Company, Ltd., 1st 6s, 1934	99	101
Abitibi Power and Paper Company, Ltd., Gen. 6s 1940	94½	96½
Abitibi Power and Paper Company, Ltd., Con. 8s 1931	102½	103½
Belgo Canadian Paper Company, 1st 6s 1943	95½	95¾
Brown Company Serial 6s	97	98¼
Carthage Sulphite Pulp and Paper Company, 1st 8s 1941	35	50
Continental Paper and Bag Mills Corporation, 1st and Ref. 6½s, Series "A," 1944	94	95
Donnacona Paper Company, Ltd., 1st 6s 1940	98	100
Eddy Paper Company, 1st 7½s 1931	94	95½
Gair (Robert) Company, 1st 7s 1937	99½	99⅞
International Paper Company, 1st and Ref. 5s (Serits "B") 1947	85	86
Mattagami Pulp and Paper Company, 1st 6s 1937	58	60
Mattagami Pulp and Paper Company, 1st 7s 1949	20	25
Oswego Falls Corporation, 1st 8s 1942	101½	102
Oxford Paper Company, 1st and Ref. 6s (Series "A") 1947	97½	99½
Parker, Young Company, 1st 6½s 1944	95½	97½
Paterson Parchment Paper Company, 1st 6s (Series "A") 1938	95	96
Peshtigo Paper Company, 1st 7s (Series "B") 1942	92	94
Price Bros. & Co., Ltd., 1st 6s (Series "A") 1943	98¼	99¼
Provincial Paper Mills, Ltd., 1st 6s 1940	98	100
Riordon Pulp and Paper Company, Ltd., Gen. 6s 1929	17	22
Riordon Pulp and Paper Company, Ltd., 6s 1942	91	92
Riordon Company, Ltd., 1st and Ref. 8s 1940	94	98
River Raisin Paper Company, 1st 8s 1936	103	104
Smith (Howard) Paper Mills, Ltd., 6s 1934	95	95½
Smith (Howard) Paper Mills, Ltd., 1st Ref. 7s 1941	90	95
Spanish River Pulp and Paper Mills, Ltd., 1st 6s 1931	102½	104
Spanish River Pulp and Paper Mills, Ltd., Gen. 8s 1941	106	107
Wayagamack Pulp and Paper Company, Ltd., 1st 6s 1951	74	77

Paper

F. o. b. Mill		
Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@30.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.65	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.15	@ 4.40
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	8.00	@ 9.50
M. F.	7.50	@ 8.85
Coated and Enamel	9.00	@14.00
Lithograph	9.00	@14.00
Tissues—		
White No. 1	.75	@ .90
White No. 2	.70	@ .80
Colored	1.05	@ 1.90
Anti-Tarnish	1.35	@ 1.90
Kraft	.90	@ 1.00
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	5.00	@ 5.75
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.00
Fibre Papers—		
No. 1 Fibre	5.50	@ 5.75
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.50	@ 2.75
S. Screening	3.25	@ 3.75
Card Middler	4.00	@ 5.00

Boards—per ton—		
News	50.00	@52.50
Straw	50.00	@55.00
Chip	37.50	@42.50
Binders' Boards	75.00	@80.00
Sgl. Mla. Lt. Chip	55.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	12.00	@15.00
Bleached, basis 20 lbs.	14.00	@17.00

Mechanical Pulp

(Ex-Dock)		
No. 1 Imported	35.00	@40.00
(F. o. b. Mill)		
No. 1 Domestic	27.50	@34.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)		
Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.15
No. 1 strong unbleached	2.75	@ 3.00
No. 2 strong unbleached	2.50	@ 2.75
No. 1 Kraft	2.75	@ 2.85
Sulphate—		
Bleached	3.50	@ 3.65
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.50	@ 4.50
Easy Bleaching Sulphite	2.60	@ 3.00
News Sulphite	2.50	@ 2.75
Mitscherlich	3.00	@ 3.50
Kraft (Domestic)	2.75	@ 3.00
Soda Bleached	3.90	@ 4.10

Domestic Rags

New Rags		
Prices to Mill, f. o. b. N. Y.		
Shirt Cuttings—		
New White, No. 1	14.00	@15.00
New White, No. 2	7.00	@ 7.75
Silesias, No. 1	8.00	@ 9.00
New Unbleached	10.50	@11.00
Washables	5.50	@ 6.15
Fancy	7.50	@ 8.50
Blue Overall	7.75	@ 8.25
New Blue	5.00	@ 5.50
New Black Soft	4.75	@ 5.25
New Light Seconds	3.00	@ 3.25
O. D. Khaki Cuttings	4.50	@ 4.75
Men's Corduroy	4.00	@ 4.25
New Canvas	7.00	@ 7.50
New Black Mixed	2.75	@ 3.00

Old Rags		
White, No. 1—		
Repacked	6.25	@ 6.75
Miscellaneous	5.50	@ 5.75
White, No. 2—		
Repacked	4.25	@ 4.50
Miscellaneous	3.75	@ 4.00
St. Soiled, White	3.00	@ 3.50
Thirds and Blues—		
Repacked	4.00	@ 4.25
Miscellaneous	3.00	@ 3.25
Black Stockings	3.50	@ 3.75
Roofing Rags—		
Cloth Strippings	1.90	@ 2.00
No. 1	2.40	@ 2.50
No. 2	2.30	@ 2.40
No. 3	1.20	@ 1.30
No. 4	1.20	@ 1.30
No. 5A	1.80	@ 1.50

Foreign Rags

New Light Silesias	7.50	@ 8.75
Light Flannelettes	8.00	@ 8.25
Unbl'chd Cottons	9.50	@10.00
New White Cuttings	11.50	@12.50
New Light Oxfords	7.75	@ 8.25
New Light Prints	7.25	@ 7.75
New Mixed Cuttings	3.25	@ 3.75
New Dark Cuttings	3.00	@ 3.50
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.00	@ 8.00
No. 3 White Linens	6.00	@ 6.50
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.50	@ 5.00
Ord. Light Prints	3.00	@ 3.50
Med. Light Prints	2.40	@ 2.50
Dutch Blue Cottons	3.50	@ 4.00
Ger. Blue Cottons	3.00	@ 3.25
Ger. Blue Linens	3.50	@ 4.00
Checks and Blues	2.25	@ 2.50
Dark Cottons	1.50	@ 1.75
Shoppery	1.40	@ 1.60
French Blues	3.25	@ 3.75

Bagging

Prices to Mill F. o. b. N. Y.		
Gunny No. 1—		
Foreign	1.80	@ 2.00
Domestic	1.75	@ 2.00
Wool, Tares, light	1.50	@ 1.60
Wool, Tares, heavy	1.50	@ 1.60
Bright Bagging	1.40	@ 1.50
Sound Bagging	.90	@ 1.00
Manila Rope—		
Foreign	6.25	@ 6.50
Domestic	6.50	@ 6.75
New Bu. Cut	2.40	@ 2.60
Hessian Jute Threads—		
Foreign	2.25	@ 2.50
Domestic	2.10	@ 2.20

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.50	@ 3.75
Hard, White, No. 2	3.25	@ 3.50
Soft, White, No. 1	3.00	@ 3.25
Flat Stock—		
Stitchless	1.60	@ 1.70
Over Issue Mag.	1.60	@ 1.70
Solid Flat Book	1.55	@ 1.65
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.90	@ 2.00
Ledger Stock	1.60	@ 1.70
New B. B. Chips	.50	@ .55
Manilas—		
New Env. Cut	2.45	@ 2.55
New Cut. No. 1	1.65	@ 1.75
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	1.00	@ 1.10
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.10	@ 2.20
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.95	@ 1.05
No. 1 Mixed Paper	.75	@ .85
Common Paper	.55	@ .65

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Dark, 18 basis	.30	@ .31
Light, 18 basis	.28	@ .30
Jute Wrapping, 3-6 Ply—		
No. 1	.20	@ .23
No. 2	.18	@ .20
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.20	@ .28
4-ply	.21	@ .24
3-ply	.22	@ .25
Unfinished India—		
Basis	.14	@ .15
Paper Makers' Twine		
Balls	.12	@ .13
Box Twine, 2-3 ply	.14	@ .15
June Rope	.20	@ .40
Amer. Hemp, 6	.30	@ .32
Sisal Hay Rope—		
No. 1 Basis	.14	@ .16
No. 2 Basis	.10	@ .12
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper

F. o. b. Mill		
All Rag Bond	35	@ 40
No. 1 Rag Bond	25	@ 35
No. 2 Rag Bond	14	@ 25
Water Marked Sulphite	9	@ 12
Sulphite Bond	6¾	@ 10¾
Sulphite Ledger	9¾	@ 12
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 18
No. 2 Fine Writing	12	@ 14
No. 3 Fine Writing	9	@ 12
No. 1 M. F. Book	5¾	@ 7½
No. 1 S. & S. C. Book	6¾	@ 7¾
Coated Book	8	@ 10
Coated Label	8	@ 10
News—Rolls, mill	3¾	@ 4½
News—Sheets, mill	4	@ 4¾
No. 1 Manila	4¾	@ 6¼
No. 1 Fibre	4¾	@ 5½
No. 2 Manila	3¾	@ 4¼
Butchers' Manila	3¾	@ 4½
No. 1 Kraft	5¼	@ 6¼
No. 2 Kraft	4¾	@ 5
Wood Tag Boards	4½	@ 6
Sulphite Screenings	2¼	@ 2¾
Manila Tissue, 20x30 sheet	7	@ —
White Tissue, 24x36 sheet	7	@ —
Boards, per ton—		
Plain Chip	47.50	@50.00
Solid news	50.00	@52.50
Manila Line Chip	57.50	@60.00
Container Lined—		
85 Tect	67.50	@70.00
100 Test	72.50	@75.00

Old Papers

F. o. b. Chicago

Shavings—		
No. 1 Hard White	3.40	@ 3.50
White Envel. Cuttings	3.40	@ 3.50
No. 1 Soft Shav.	3.15	@ 3.25
No. 1 Mixed	1.55	@ 1.75
No. 2 Mixed	1.00	@ 1.20

Ledgers and Writings	1.75	@	1.80
Solid Books	1.70	@	1.75
No. 1 Books, Light	1.35	@	1.40
Blanks	210	@	2.15
Ex. No. 1 Manila	2.30	@	2.40
Manila Envelope Cuttings	2.50	@	—
No. 1 Manila	1.35	@	1.45
Folded News (over issue)	1.15	@	1.20
Old Newspapers—			
No. 1	1.05	@	1.10
No. 2	.95	@	1.00
Mixed Papers—			
No. 1	1.00	@	—
No. 2	.80	@	.85
Straw Clippings	1.00	@	—
Binders' Clippings	1.00	@	—
Kraft	2.35	@	2.45
New Kraft Cuts	2.55	@	—
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	$42.00	@	—
No. 2	40.00	@	—
No. 3	38.00	@	—
No. 4	38.00	@	—

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.09½	@	.53
Ledgers	.15	@	.40
Writings—			
Superfine	.15	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.30
Fine, No. 2	.20	@	.25
Fine, No. 3	.15	@	.30
Book, M. F.	.09¾	@	.12¾
Book, S. S. & C.	.11	@	.15
Book, Coated	.14¼	@	.20
Coated Lithograph.	.10	@	.15
Label	.10	@	.15
News	.05	@	.07
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.08	@	.10
Manila No. 2	.07¼	@	.08
No. 2 Kraft	—	@	.08½
No. 1 Kraft	—	@	.09½
Common Bogus	.03½	@	.04
Shaw Board	55.00	@	60.00
News Board	42.50	@	—
Chip Board	40.00	@	42.50
Wood Pulp Board, (Carload Lots)	2.75	@	3.00
Binder Boards—			
Per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply.	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny No. 1—			
Foreign	1.75	@	1.85
Domestic	1.75	@	2.00
Manila Rope	5.00	@	5.50
Sisal Rope	2.50	@	—
Mixed Rope	1.25	@	—
Scrap Burlaps	1.00	@	1.25
Wool Tares, heavy.	2.00	@	2.13
Mixed Strings	1.00	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.50	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1, Hard White	3.40	@	3.60
No. 2, Hard White	3.25	@	3.40
No. 1 Soft White	3.10	@	3.25
No. 2 Soft White	2.00	@	2.25
No. 1 Mixed	2.00	@	—
No. 2 Mixed	1.25	@	1.30
Solid Ledger Stock.	1.65	@	1.85
Writing Paper	1.50	@	1.75
No. 1 Books, heavy	1.45	@	1.60
No. 2 Books, light.	1.15	@	1.25
No. 1 New Manila.	2.40	@	2.50
No. 1 Old Manila.	1.50	@	1.75
Container Manila.	1.25	@	1.40
Old Kraft	2.15	@	2.25
Overissue News	1.05	@	1.10
Old Newspaper	1.05	@	1.40
No. 1 Mixed Paper.	.80	@	.90
Common Paper	.65	@	.70
Straw Board, Chip.	.65	@	.70
Binders Bd., Chip.	.65	@	.70

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.12	@	.13
New White, No. 2	.07	@	—
Silesias, No. 1	.08¾	@	.08½
New Unbleached.	.11½	@	.11¾
Washable	.05½	@	.05¾
Fancy	.07	@	.07¼
Cottons—according to grades—			
Blue Overall	.09¼	@	.09½
New Blue	.03½	@	.03¾
New Black Soft.	.06	@	.06¾
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.10½	@	.11
New Black Mixed	.05	@	.05¼

Old

White, No. 1—			
Repacked	7.50	@	8.00
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05½
Miscellaneous	.04¾	@	.05¼
Thirds and Blues—			
Repacked	3.65	@	3.85
Miscellaneous	3.15	@	3.25
Black Stockings	4.00	@	4.50
Roofing Stock—			
No. 1	2.30	@	240
No. 2	2.20	@	2.30
No. 3	1.15	@	1.20
No. 4	2.10	@	2.20
No. 5A	1.40	@	—
B	1.25		nominal
C	1.15		nominal

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark tinted	.13½	@	.15
Ledgers (sulphite)	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)	3.65	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rag	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	$28.00	@	30.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	50.00	@	55.00
Sulphite, bleached.	80.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut.	3.60	@	—
Soft White Book shavings	3.00	@	—
White Blk. News	1.90	@	—
Book and Ledger—			
Flat Magazine and Book Stock(old)	1.50	@	—
Light and Crumpled Book Stock	1.35	@	—
Ledgers and Writings	1.75	@	—
Solid Ledgers	1.75	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas	1.20	@	—
Kraft	2.05	@	—
News and Scrap—			
Strictly Overissue	1.00	@	—
Folded News	1.00	@	—
No. 1 Mixed Papers	—	@	.85

Domestic Rags—

Price to mills, f. o. b. Toronto

	Per lb.		
No. 1 White shirt cuttings	.14	@	.14¼
No. 2 White shirt cuttings	.07	@	.07½
Fancy shirt cuttings	.07½	@	.08
No. 1 Old Whites.	—	@	—
Third and blues	.05½	@	.05¾
	Per cwt.		
Black stockings	.04	@	—
Roofing stock:			
No. 1	2.20	@	—
No. 2	2.10	@	—
Manila rope	.06	@	.06¼
No. 2	1.55	@	—

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag Content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.14
Rag Content	.16	@	.33½
All Rag	.36½	@	.51
Writings	.08½	@	.20
Superfines	.20	@	.48
News	.04	@	.06½
Bock, M. F.	.06½	@	.10¾
Book, Super	.07½	@	.11
Book, Coated	.09½	@	.20
Coated Litho	.10	@	.15
Label	.09½	@	.15
Jute Manila No. 1.	.12	@	.13
Manila, Sul. No. 1.	.05	@	.06
Manila, Sul. No. 2.	.03¾	@	.04¼
No. 1 Kraft	6¼	@	.06½
No. 2 Kraft	.05¾	@	.05½
Common Bogus	.03½	@	.04
Straw Board	50.00	@	55.00
News Board	47.50	@	50.00
Chip Board	45.00	@	47.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slater's	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
White Blank News.	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White.	3.10	@	3.25
No. 2 Soft White.	2.25	@	2.50
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock.	2.00	@	2.25
Writing Paper	—	@	1.70
No. 1 Books, Heavy	1.60	@	1.80
No. 1 Books, Light	1.40	@	1.50
No. 1 New Manila.	2.50	@	2.60
No. 1 Old Manila.	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.00	@	1.20
Old Newspapers	.90	@	1.00
No. 1 Mixed Paper.	.85	@	.90
Box Board, Chip	.85	@	.90

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.12½	@	2.00
Domestic	2.00	@	2.12½
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	1.62½
Scrap Burlaps	1.25	@	1.50
Wool Tares, heavy.	2.00	@	2.13
Mixed Strings	1.50	@	1.62½
New Burlap Cuttings	2.00	@	2.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.13½	@	.14
Silesias, No. 1	.09	@	.09½
New Unbleached.	.12½	@	.13
Washable	.06	@	.06½
Fancy	.07	@	.07¼
Cottons — according to grades, Blue Overall	.09½	@	.10
New Blue	.05½	@	.06
New Black, soft	.06	@	.06¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.10½	@	.11

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	7.50	@	8.00
Miscellaneous	6.50	@	7.00
White No. 2—			
Repacked	5.50	@	6.00
Miscellaneous	4.75	@	5.50
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.25
Roofing Stock—			
No. 1	2.25	@	2.37
No. 2	2.12½	@	2.25
No. 3	1.50	@	1.75
No. 4	1.15	@	1.20

New Railway Opens Up Timber Lands

The completion of the Interprovincial and James Bay Railway from Kipawa, in the Province of Quebec, 76 miles north, to Lac des Quinze, has opened up for immediate development a tract of about 480 square miles of timber lands estimated to contain 1,614,000 cords of pulpwood, in addition to considerable quantities of hardwood. According to the reports of the Canadian Pacific Railway, which owns the Interprovincial and James Bay Railway, and which is offering these timberlands for sale, about 75 per cent of the whole area is within the limit of a two-mile haul to drivable streams, the average haul on the remaining 25 per cent being about 3½ to 4 miles. Logs can easily be floated to Lac des Quinze and the Des Quinze River from the areas referred to, which are close to Lake Abitibi. Ample power is available for milling. The Interprovincial and James Bay Railway runs east of Lake Temiskaming and West and North of Lake Kipawa.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, September 24, 1924.

Unqualified optimism has at last returned to the paper market. There have been those who have never permitted their optimism to die out but there have been many times during the past few months when even the best quality of optimism has badly sagged. Business is not yet normal but normalcy is in sight which is better than the paper men have been able to say for a long time. If conditions continue to improve during the next three weeks as they have during the past three the paper business, before October is over, will be back to normal or very close to it. That alone has promoted optimism and placed the paper men in a different frame of mind from what they have known for weeks.

All business reports continue to show that the country is fast recovering from the mysterious ailment which has effected business. Retail business all over the country is reported much improved. More factories are busy, more men are employed and everyone from the small business man to the large corporation is feeling the improvement. In the paper field the improvement is in keeping with business in general. Mills are back on a better schedule, the production is better than a month ago, the printing industry is greatly improved and consequently the demand for almost every line of paper is better than it has been. Prices are holding firm and the trend is upward although the time is not yet deemed opportune for any general advance. Before another month passes, however, there is every likelihood that most of the lines will see an advance. There seems to be a general realization throughout the trade that now is a good time to buy. This is indicated somewhat by the increased orders but even more so by the more numerous inquiries. Buyers are in a buying mood but many of them still hold off persistently and are hard to wean away from the spirit of cautious buying which they have so long followed that it has almost become a habit. But even the hesitancy that has been prompted by the political situation is wearing away. Confidence in the future is returning where there has been skepticism and this all goes to promote a better feeling which means better business.

When the first gains were made in the market there was a hesitancy about placing too great weight on it but as week after week has brought betterment confidence has grown until today every one connected with the paper trade looks for really excellent business in the near future which may culminate in a banner round out for the year.

News print, during the past week, experienced the best week's business it has had in a long time. The business in rolls showed the largest increases, indicating that the newspapers are having no complaint of poor business and are receiving their normal amount of business from the advertisers.

Book papers are in better demand than they have been for some time. All grades of fine papers are looking up. Exporters note a considerable increase in their business and are looking for a much greater volume of export business before long.

Tissues are picking up a little from day to day although the demand is still light. Recovery from the very slack times they have seen can hardly be expected at once. Board is on the mend and there is every indication that prices here will move upward before a great while.

Mechanical Pulp

Mechanical pulp is participating in the general improvement. The demand is equal to the available stock and an increase in price is an almost certain likelihood.

Chemical Pulp

The chemical pulp market is strong and is apparently on the verge of a schedule of better prices. The foreign grades are very active. There is not an over-supply of stock in the market at the present time.

Rags

Collections of rags continue to be better but there is still a scarcity. The demand is improving steadily and the stock is picked up about as rapidly as it reaches the market. Foreign rags are in demand but they are being secured with difficulty. Prices are holding strong.

Old Rope and Bagging

The demand for old rope is light but the prices are holding steady. The demand for bagging is on the improve, the better grades being especially in demand.

Waste Paper

The waste paper market is exhibiting a healthier tone. The demand is much better but there has been an easing off in prices on some grades.

Twine

Twine dealers are finding business somewhat better although the demand is not what it should be in view of the slow spell twine has experienced. No new schedule of prices has been put into effect yet.

August News Print Statistics

Production of news print according to the News Print Service Bureau in the United States during August amounted to 116,477 tons and shipments to 115,997 tons. Production in Canada amounted to 113,763 tons and shipments to 112,148 tons; making a total production of 230,240 tons and shipments of 228,145 tons, by 64 companies. The news print mills also made 1,495 tons of hanging paper, 600 tons of which were made in Canada. Stocks of news print paper at United States mills totaled 26,377 tons at the end of August and at Canadian mills 20,450 tons, making a combined total of 48,657 tons which was equivalent to 4.8 days' average production.

Comparing production during the first eight months of 1924 with similar periods in each of the four previous years the United States mills show 3 per cent less than 1923; 4 per cent increase over 1922, 21 per cent over 1921, 4 per cent less than 1920; the Canadian mills show 9 per cent more than in 1923, 29 per cent more than in 1922, 76 per cent more than in 1921 and 53 per cent more than in 1920. The combined production of the United States and Canada shows an increase of 1 per cent over 1923, 15 per cent over 1922, 42 per cent over 1921 and 17 per cent over 1920.

Salesmen Resume Weekly Meetings

The New York and Chicago groups of the Salesmen's Association both went back to their fall schedule of weekly meetings on Monday, meetings having been held only once a month during the summer. There was a good attendance both at the New York and Chicago meetings and the round table discussions on the business situation showed the members to be of the unanimous opinion that conditions had materially improved and are continually looking upward.

The outing up the Hudson which the New York group had scheduled for next week has been again postponed, the new date not having yet been decided on. The New York group is arranging a program of special speakers of note who will address them during the coming season. The first of these will be Albert Reeves, manager of the Automobile Chamber of Commerce who will address the members at their weekly luncheon at Hotel Belmont on Monday, October 6. His subject will be "salesmanship in The Automobile World." Every effort will be made to provide a program for the season that will prove a genuine treat for the New York salesmen.

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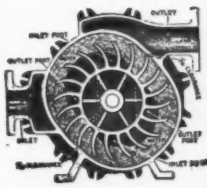
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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, September 24, 1924.

The chemical market may be said to be waiting on the announcement of new price schedules. While business has shown a very material improvement during the past two weeks or so it is very evident that a considerable amount of business is being held in abeyance with the momentary expectation of a new price announcement from the manufacturers. Most of the chemicals are still registering gains but the price factor is one that has to be reckoned with. It is nearing the close of the year and it is expected that the new schedule for next year will, on several of the commodities, show a downward trend. Fall business is now showing a healthier tone. It is not what Fall business should be, it is generally admitted, but this is, in many respects, an unusual year. The market during the summer reached an unusually low ebb and it is too much to expect it to climb back to normal all at once. However, it is moving in that direction and the dealers are expressing the utmost satisfaction with the gain which has been recorded since September 1. There is another week to go before the month is over and, if the progress in the right direction continues, October 1 will find the market in a very satisfactory condition. Business reports from all over the country continue to be encouraging, indicating that trade in general is staging a slow comeback from its summer dullness and, as the improvement continues, the chemical market will share in the better business. Prices are at present holding firm although no changes in quotations have been made during the week.

BLANC FIXE.—There has been no change in blanc fixe, the demand continuing slow but the price holding firm. It is quoted at from $75 to $80 a ton for the powder and from $50 to $55 for the pulp.

BLEACHING POWDER.—There has been no new development in the case of bleaching powder. The manufacturers are not yet giving out any word as to the next price schedule and the buyers are taking as little as possible and are holding off until they learn what the new price is going to be. It is the general impression that it will not be higher than 1.90 with a probability of it being lower. It is probable, however, that the new price will not be announced before October at any rate. The present price is from 1.90 to 2.15 cents a pound.

CAUSTIC SODA.—Caustic soda is doing very nicely at the present time. The dealers are taking out considerable quantities. There is very little stock in the market for immediate shipment. The price remains at from 3.10 to 3.15 cents a pound on a flat basis at the works.

CASEIN.—Casein remains in about the same condition as a week ago with only a slight demand. The price is still from 10½ to 11 cents a pound.

CHINA CLAY.—The demand for China clay has showed a little more improvement during the week. The price is firm. It is still selling at from $16 to $20 a ton for the imported grades and from $12 to $15 a ton for the domestic grades.

CHLORINE.—As in the case of bleaching powder, the awaiting of a new price schedule is having its effect on the demand for chlorine. The price for next year is being eagerly awaited but up to the present time there has been no intimation as to what this will be.

ROSIN.—The rosin market is constantly improving and a new briskness has been created by the unusual number of inquiries which are being received. The foreign demand is particularly good. The quotation is still $6.00 although frequent sales continue to be reported at a price in excess of that figure.

SALT CAKE.—Salt cake continues to meet an improved demand and the call for spot supplies is much better than it was a week or two ago. Now that the glass trade is starting in on its winter's business a firmer market is looked for. It is now quoted at from $17 to $20 a ton.

SODA ASH.—A little more disposition to spurt ahead is being shown by soda ash, the demand having materially increased during the past week. The price continues at 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—Sulphate of alumina, which has been picking up, had another excellent week of business. The price continues at from 1.30 to 1.35 cents for the commercial grade at the Eastern works and from 2.10 to 2.25 cents a pound for iron free.

SULPHUR.—There is nothing new in the sulphur situation. The price holds at from $18 to $19 a ton.

TALC.—Talc is still improving and the demand is the best it has been for some time. Its outlook at the present time is most encouraging. The price continues from $16 to $17 a ton.

Confer on Trade Associations

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., September 23, 1924.—A committee of the Chamber of Commerce of the United States, headed by President Richard F. Grant of that body yesterday conferred on trade association activities with the Federal Trade Commission, Attorney General Stone, and Secretary of Commerce, Hoover.

It is understood that the conference was very preliminary in character and only to lay the matter before these government officials but opening the way for further conferences, probably to be held the latter part of October.

The committee laid before the officials, it is said, the results of the trade association referendum taken last year by the National Chamber. In this connection it is interesting to note that some 300 trade associations are members of the national body.

Following the conferences President Grant said that the National Chamber believes that legitimate trade associations perform a great public service and the desire is to find out, if possible, just what a trade association can, or can not do under the Sherman law. What the trade associations want, he said, is a note of reassurance from some government department. They are not anxious for a court test case unless that is absolutely necessary. There is no question, he said, but that the government wants to be of assistance to such associations as are within the law.

The committee attending the conferences on behalf of the Chamber of Commerce, in addition to President Grant included: Milton E. Marcuse, president of the Bedford Pulp and Paper Company, Richmond, Va.; George Rublee, of this city, former member of the Federal Trade Commission; Alfred Reeves, of the National Automobile Chamber of Commerce; and Elliot H. Goodwin, vice-president of the U. S. Chamber of Commerce.

Arrangements for Chicago Fall Conferences

Although there will not be the usual fall business conference of the American Paper and Pulp Association at Chicago this fall, there will be a meeting of the Executive Committee and Advisory Board held at Chicago on October 14, during the convention of the National Paper Trade Association in that city.

This meeting will include the former presidents of the American Paper and Pulp Association, and the presidents of the affiliated organizations, as well as the Executive Committee, which under the reorganization of the Association consists of only five representatives of the industry in addition to the President and Vice-Presidents.

When it was decided to hold the annual convention of the American Paper and Pulp Association in February instead of April, 1925, it was also decided to drop the usual fall conference. The paper merchants, however, through the National Paper Trade Association will hold their usual fall convention.

The Salesmen's Association of the Paper Industry also will not hold a fall convention, but will concentrate its efforts on the big convention in New York the week of February 2, 1925.